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LEADING ARTICLES

SUDDEN ABDOMINAL PAIN—ITS SIGNIFICANCE.

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CHICAGO.

We do well what we do automatically.
Truth should be constantly advocated because the majority constantly advocate error.

Abdominal surgery is no longer a pioneer work. It is the result of the accumulated experience of the past fifty years. Its success is based on well tried practices. It is a jealous field, filled with battles lost and won, dotted here and there with sad regrets, chagrin from unavoidable mistakes, but often brightened by the light of success. A masterhand in abdominal surgery is a hard-earned reputation. However, the accumulative experience of fifty years has still left obscure points in abdominal surgery which the genius of Lawson Tait has attempted to set at rest by the exploratory and confirmatory incision.

During the past fifteen years I have been particularly interested in gynecology and abdominal surgery, and all along these years has risen the question of abdominal pain and its signification. To interpret abdominal pain requires the best skill of the finest heads.

Sudden, severe, abdominal pain is the one significant, early symptom sounding the hope for relief or the knell of doom. In the interpretation of sudden appearance of abdominal pain lies the physician's chance of success or failure—usefulness or disaster. This cry of sudden pain may come from multiple lesions or sources—it may be the appeal of a strangulated loop of intestine on the verge of gangrene; the demand of an agonizing ureter afflicted with a bristling calculus; the disaster of a perforated appendix in the dangerous enteronic peritonitic area; the horrible, grinding, hopeless pain of a biliary calculus; the calamity of a ruptured gestating oviduct; or from beginning painful perforation peritonitis of impossible diagnostic origin—accompanied by excruciating pain.

Abdominal pain belongs to the domain of the sympathetic nerve and should be interpreted according to its life and habits, in relation to its anatomy, distribution to viscera and physiology (rhythm) peristalsis.

Severe abdominal pain is the appeal for prompt, efficient assistance. In the first place, in my experience, the natural manifestation of sudden abdominal pain is too frequently obtunded, dulled, lulled into a treacherous quietude by the general practitioner's employment of heavy hypodermic injections of morphia, which obscures diagnosis. Frequently it is the mode of onset, the sudden appearance and location of the pain that affords the sharpest aid to diagnosis, and if the sharpest, delicate symptoms are obscured by morphia it may jeopardize the patient's life.

Sudden pain in the abdomen is frequently the guiding, suggestive, means to a diagnosis. Pain is the most constant beginning feature and frequently the most constant, persistent characteristic. For this reason the practitioner should secure a complete clinical history, mode of onset, location of pain, rhythmic or constant, before he obscures its most delicate and valuable aid to diagnosis. Abdominal pain is Nature's warning that mischief is afoot in the abdomen, and its manifestations should not be obscured by opium until sufficient evidence is to diagnose the cause. The successful diagnosis depends on the most careful analysis of every available symptom in severe abdominal pain, which is defective in a narcotized patient.

A characteristic of sudden abdominal pain is that at first it is diffuse or mainly in the umbilical region (the abdominal brain, the sensorium of the abdominal viscera).

Gradually, with the lapse of time—hours—it becomes more and more localized in the region of the affected organ (beginning local peritonitis).

A suggestive symptom is that almost all patients with sudden abdominal pain, especially beginning peritonitis, *vomit*.

The failure of the general practitioner in appreciating the significance of sudden severe abdominal pain results in late, and too frequently disastrous surgery, also in disastrous treatment by administrating cathartics, the enemy of visceral quietude.

In sudden abdominal pain the pulse in general is of more practical value than temperature. In some advanced, grave abdominal diseases the pain is limited or absent. Overwhelming profound sepsis has obtunded sensibility. In sudden abdominal pain the first and foremost matter is its diagnosis—the rock and base of rational treatment. The diagnosis is absolutely required in order to attempt rationally to remove the cause.

Probability is the rule of life and it is just as applicable in diagnosing sudden abdominal pain as in other matters. For example, when a man is attacked by sudden abdominal pain and vomiting with rise of temperature, pulse and respiration, the probability is that it is appendicitis—not perforation of the gastrium enteron or colon, for, that occurs perhaps one hundred times less than perforation of the appendix.

Observation.—I was called to attend a physician who was attacked with sudden abdominal pain while riding in his buggy. The abdominal pain from the beginning was located several inches to the left of the median line of the abdomen. The diagnosis was ruptured appendicitis from a potential appendix, i. e., one with an elongated meso-coeco-appendicular apparatus capable of extending or moving to locations distant from the usual appendicular site. The improbable diagnosis was intestinal perforation, because the appendix perforates perhaps a hundredfold more than the intestine. In operating on the physician forty hours subsequent to the attack I found the peritonitis localized to the left of the median line of the abdomen. The potential appendix was practically in its usual location, however, surrounded by peritonitis. The explanation was evident. He had a potential appendix, which while wandering amongst the intestinal loops in the left half of the abdomen had become perforated and immediately, before adhesions formed, returned to its usual location in the right iliac fossa. The extensive, varying mobility of the cecum and appendix should be included in the anatomic diagnosis.

Anatomy is the solid ground of nature on which to build a rational diagnosis of sudden abdominal pain.

PATIENT'S HISTORY.

We should study the history of the abdominal pain in each patient for aid in diagnosis.

A clinical study of abdominal pain is of the utmost importance to both general physician and abdominal surgeon. Has the patient experienced similar sudden abdominal pain previously? What was the length of time elapsed between the previous attacks of pain? If the pain is recurrent it is probably from the same original cause, e.g., repeated perforated appendicitis or repeated attacks from calculus. Has the pain any regular persistent relation to the ingestion of food or fluid? If so we examine the proximal end of the tractus intestinalis, as for gastritis, ulceration, biliary passages, pancreatic disease and perhaps appendicitis. If the pain persistently precedes or follows defecation search for rectal disease—hemorrhoids, fissure, ulceration, carcinoma. If the pain recurs with menstruation one examines the genitals. If the pain be sudden and occurring for the first time we should scrutinize its history. Pain following extra exertion may be due to hernial strangulation, ruptured pregnant oviduct, breaking of peritoneal adhesions, formation of volvulus, rupture of a cystic tumor, an ovarian cyst rotated on its pedicle. Pain following extra trauma may be ruptured bladder, stomach, intestines or other viscera. In gestation an impending miscarriage may cause sudden abdominal pain. Clinical history is the most valuable in acute abdominal pain—not in chronic. Repeated rough rides with repeated abdominal pain is suggestive of calculus. The repeated abdominal pains due to painful peristalsis in inflamed tubes or ducts—biliary, ureteral, intestinal, genital—is still difficult to diagnose.

It should be distinctly remembered that sudden recurrent abdominal pain following peritonotomy or peritonitis is mainly due to peritoneal bands checking peristalsis. Sudden abdominal pain in a patient who had had hernia is liable to be from constrictions of peritoneal bands. The clinical history is frequently a pencil of light in the diagnosis of sudden abdominal pain.

AGE AND SEX.

Age and sex are of extreme value in diagnosing sudden abdominal pain. In woman, in the maximum sexual phase, the lesions of the tractus genitalis surpass those of the tractus intestinalis. Still a differential diagnosis between appendicitis and right-sided inflamed oviduct, peritoneum and ovary, is frequently difficult.

Sudden pain in anemic young women may be perforating round ulcer of stomach.

In children lesions of the tractus intestinalis preponderate, gastero-enteritis, invagination, enterocolitis, appendicitis.

In senescence malignancy may attack the gastrum colon, rectum gall bladder and pancreas, as well as ulceration of the intestinal tract usher in pain.

CHARACTER OF ABDOMINAL PAIN.

Abdominal pain may be acute or chronic, it may be tolerant or excruciating (peritoneal extravasation). It may be due to intra-abdominal or extra-abdominal disease. It may arise from violent peristalsis (colic) in tubular viscera or from inflammation. Abdominal pain may be due to disease or trauma.

If one will closely watch the sudden acute abdominal pain, it will be quite apparent that the character of the pain in most of the acute affections is very similar. We only observe a reality in difference in degree of pain from the bearable to the agonizing. In perforation the character of the pain is the same in all viscera. In invagination it is paroxysmal and periodic, at least at first, due to irregular and violent peristalsis. In internal strangulation it is generally intense and periodic, due to violent peristalsis, later continuous and of an aching, dragging character, due to paralysis of the bowel segments. In appendicitis the pain is nearly always sudden and intense, i.e., the perforative variety. The variety of appendicitis with slowly increasing pain is likely lymphatic in invasion and not dangerous, simply medical, though of course the appendicular mucosa may be perforated. Sudden, acute abdominal pain of a lancinating charcter, and quite continuous, is very likely to be due to perforation of the appendix or digestive tube, and the continuous, agonizing character of the pain is a heraldic symptom of diffuse peritonitis—the knell of life. It may be remembered that the character of sudden acute abdominal pain will depend on the capacity of any viscus for peristalsis, i. e., its capactiy to cause colic by violent, wild, irregular muscular action. In peristalsis periodicity must not be lost sight of, and the etiology which gives rise to the irritation, inducing the peristalsis. It may be transitory in character, as food irritation, rapidly forming and inducing invagination, or a calculus attempting to enter a duct. Or the pain may be continuously periodic, as a calculus lodged in some canal, appendix, ureter, enteron, colon, or biliary.

LOCATION OF ABDOMINAL PAIN.

How far can we diagnose abdominal pain by its locality? Only to a limited degree. Associated circumstances must aid in the diagnosis. There are three common localities of acute abdominal pain or peritonitis, viz., pelvic, appendicular and that of the gall-bladder region; and as probability is the rule of life, it is well to diagnose acute abdominal pain as a disturbance in one of these three localities of the peritoneum.

Acute abdominal pain in general is referred to the umbilicus—in other words, the region immediately over the solar plexus or abdominal brain, the receiver of the impressions of abdominal viscera. Acute abdominal pain is due to a disturbance of the peritoneum, owing to a lesion of an adjacent viscus; but since the peritoneal lesion can arise from many organs and from several points of the same organ, it demands the most experienced diagnostic acumen and the most mature judgment to interpret the significance of the trouble through the abdominal wall. No one can decide what kind of wood lies under a table cloth. I have repeatedly observed in appendicitis that patients say the acute pain, especially in the beginning, is over the whole middle of the abdomen (solar plexus). This may be due to excessive and violent peristalsis of the small intestines. As regards locating the pain at any point of the enteron, it cannot be done, first, because the loops of intestines have no distinct order as to locality; second, the patient cannot discriminate a point of pain at any given locality, perhaps from lack of practical experience.

However, another kind of sudden severe abdominal pain may arise from violent irregular peristalsis (rhythm) in non-inflamed tubular viscera, as foreign bodies (hepatic, pancreatic, ureteral, intestinal calculus) as strictures (intestinal, ureteral, biliary, pancreatic ducts, appendix, oviducts).

In sudden abdominal pain (especially peritonitic extravasation) four factors may be observed, viz: (a) (Sympathetic) First, diffuse pain in the central abdomen, umbilical region, solar plexus, the three, abdominal sensory, cutaneous and muscular areas are affected, shocked. The bed clothing cannot be tolerated (sensory, skin) and the abdominal muscles are rigid.

(b) Later localization of the pain occurs over the affected viscera (peritonitis).

(c) (Spinal nerves) Rigidity of abdominal muscles arises over affected viscus (somatic muscular, protection of viscera).

(d) Hyperesthesia of the skin over the affected viscus (somatic cutaneous, protection of viscera).

It must be noted that cutaneous or sensory manifestations of somatic spinal and visceral nerves may extend over their en-

tire periphery, e.g., in appendicitis hyperesthesia or supersensitiveness of the skin may be found in the right iliac fossa, over the pubis, pudendum, along Poupart's ligament, and even in the testicle.

In regard to the location of sudden acute abdominal pain we have to consider (a) the seat of pain as felt by the patient; the pain elicited by pressure (tenderness); (c) local rigidity of the abdominal muscles; and (d) anesthetic or hyperesthetic condition of the skin of the abdomen.

As to local tenderness of pain elicited by pressure, it indicates a pathologic condition of the peritoneum (inflammatory). The pain is induced by motion or disturbance communicated to a sensitive inflamed peritoneum.

Local rigidity of abdominal muscles indicates adjacent underlying disease of organs supplied by the same nerves as the muscles which exercise a protective agency, to preserve rest for damaged tissue, to assume repair, and to prevent further destruction, from motion. Hyperesthesia or sensitiveness of the skin, due to transmitted irritation, is often present, but is not very reliable as to locality, for it is dependent on peculiar symptoms and accompanies, more or less, though irregularly, most acute abdominal affections. Of course it would be expected that the severe, sudden onset of pain in the kidney and gall-ducts, being very near the abdominal brain would be difficult to separate from the solar plexus. Lead colic may deceive the most elect as to its etiology or seat.

With few exceptions, to locate the seat of trouble in acute abdominal pain, we call to our aid the pain elicited by pressure. Pressing the abdominal walls produces a distinct localized tenderness or pain which suggests localized pathology. Again, rigidity or tension of the abdominal wall is suggestive of pathologic, locality. The symptom is purely reflex, due to irritation passing from the involved viscera to the spinal cord, whence its irritation is transmitted to the periphery of the lower intercostal nerves which control the abdominal muscles over the seat of pain. Dashing cold water on the belly will produce similar protective muscular rigidity. Hence, in general, the location of the disease in the abdomen from the patient's feeling of sudden acute pain, is quite indefinite. But local tenderness and local pain on pressure aid very much. Localized rigidity of the abdominal wall is suggestive that such tension is protecting the seat of disease from motion, further bacterial or fecal invasion. In short the rigid muscles are putting the pathologic parts to anatomic and physiologic rest.

Vomiting, is a general characteristic of sudden acute abdominal pain. In sudden acute abdominal pain, from visceral lesion, Nature makes profound effort to manifest its distress, but to diagnose the seat of pathology and nature from localization of the pain requires much reading between the lines from experience and judgment.

Again, a vast difference arises between sudden acute abdominal pain and that which comes on slowly. Much depends on the stage of the disease in which the physician first visits the patient.

The signification of sudden acute abdominal pain may be realized better by a short consideration of some of the principal conditions which occasion it.

In some cases the physician is unable to localize the pain in any visceral tract under such conditions, the apt remark is that probability is the rule of life; hence an exploratory operation in the region of the appendix and gall-bladder is justifiable in subjects with imminent danger.

REFLEX OR REFERRED PAIN.

In general, sudden acute abdominal pain is referred by the patient to the umbilical region, to the solar plexus, directly over the abdominal brain. This, in my opinion, is a nervous center, possessing the power of reorganization, of receiving and transmitting forces, controlling visceral circulation and inducing reflex or referred pain. The irritation of peripheral visceral nerves is transmitted to the abdominal pain, when reorganization may localize the pain over the abdominal brain, at the seat of disease, or at a remote abdominal point, due to a supersensitive nervous system.

Obscure symptoms of abdominal pain.

Reflex pain from distant areas may simulate severe abdominal pain, multiplying the difficulties in differential diagnosis.

Obscure symptoms of abdominal pain arise from the invasion of the peritoneum from pneumonia. In fact I have seen a half dozen physicians in consultation advise and perform peritonotomy in a case of pneumonia, so deceptive were the abdominal symptoms—pain, tenderness, tympanitis, temperature, muscular rigidity and respiration.

Pleurisy or intercostal neuralgia extending over a large area of intercostal nerves which supply the abdominal wall may simulate sudden abdominal pain — for the trunk of a nerve being irritated manifests its sensation, pain, at its periphery which in the case of the intercostal end in the abdominal wall.

Abscess in the abdominal wall may simulate abdominal, peritoneal or visceral pain, from irritation of the intercostal (abdominal wall) nerves. Dr. Lucy Waite had in her charge in the hospital a child with an abscess in the abdominal wall which simulated extremely abdominal visceral (peritoneal) disease.

Amygdalitis, mastitis and hysteria may simulate abdominal pain.

In post-operative peritoneal hemorrhage (peritoneal extravasation) the pain is obscure, as the previously traumatized, and consequently obtunded, sensibility of the peritoneum does not manifest recognition of the bleeding, while peritoneal hemorrhage (peritoneal extravasation) from ruptured pregnant oviduct produces excruciating pain.

Spinal cord lesions may simulate abdominal pain by a diffuse sensitiveness over the affected intercostal nerves, e.g., the girdle constricting pain in tabes dorsalis or locomotor ataxia.

Uremia may be accompanied by persistent vomiting. Pain in right shoulder may refer to hepatic disease.

Spinal caries may produce pain in portions of the abdomen from pressure on dorsal or lumbar nerves, as sensory areas or rigid muscular areas.

Testicular pain may refer to a ureteral calculus. Crushed testicle may induce severe abdominal pain, vomiting and shock, as its route to the abdominal brain is direct and rich in nerves.

Hyperesthesia of the iliac regions are deceptive, because these regions are supplied by the cutaneous branches of the ileo-hypogastric nerve (first lumbar). McBurney's point is practically a skin hyperesthesia, a super-sensitiveness of skin area included in the peripheral region of cutaneous twigs of the last dorsal (twelfth intercostal) nerve and the ileo-hypogastric (first lumbar) nerve.

In short, if any sensory intercostal or lumbar nerve be affected (by some somatic diseased viscera) it will manifest sensory skin areas at its corresponding periphery.

Muscular rigidity of the abdominal wall will be manifest in the somatic area of the spinal nerves corresponding to the diseased viscera (simulating the cutaneous area). In short, if any motor intercostal or lumbar nerve be affected (by somatic diseased viscera) it will manifest motor (muscular rigidity) area at its corresponding periphery.

A feature of obscruity in the diagnosis in abdominal muscular rigidity is that when a part of an abdominal muscle becomes irritated, the whole (and not part) of the muscle becomes rigid. Hence the muscular rigidity is the same for perforated appendix or gall-bladder. For general peritonitis the whole abdominal muscular apparatus is rigid.

In the tractus nervosus the neuroma of intercostal or lumbar nerves must not be overlooked. I have observed three subjects of neuroma on the ileo-hypogastric or ileo-inguinal nerve. One in Prof. Senn's clinic where a neuroma on a nerve in the abdominal wall in the region of the appendix was exquisitely tender inducing a diagnosis of appendicitis. The analytic, searching, diagnostic methods of Prof. Senn soon discovered the tender neuroma, which he removed instead of the appendix. One subject, a female, 24 years of age was sent to me with a diagnosis of appendicitis. I found a typical neuroma on the lumbar nerve in the region of the appendix. A third case of neuroma of a lumbar nerve in the appendicular region I saw in consultation with Dr. I. Washburn, of Renssalear, Indiana. Abdominal pain is the surface indication of various pathologic states of the abdominal organs (or abdominal wall). In abdominal pain the chief skill is in the diagnosis for the correct treatment depends on the diagnosis. The more correct the diagnosis the less "neurosis" will occur in abdominal pain.

All the visceral tracts except the nervous may manifest painful peristalsis from inflamed ducts or canals.

STRANGULATION BY BANDS AND THROUGH APERTURES.

Strangulation by bands and through apertures constitutes one-third of all intestinal obstructions. If the bowel loops slip through an inguinal or femoral apertures, digital examination will detect the cause of sudden, acute abdominal pain. Obturator and sacro sciatic hernia are seldom diagnosed, so that they would practically come under internal strangulation by peritoneal bands. Sex does not aid in diagnosis, for males and females about balance in peritonitis during life, hence will possess about the same amount of peritonitic bands.

A history of previous pertonitis tells a significant story of strangulation by bands. Vomiting is violent, pain from peristalsis is periodic and general over the abdomen. The pain is not due to checking of the fecal current, but to reflex irritation of the bowel at the seat of obstruction. Temperature is not conspicuous and the pulse is not much changed. Tympanites arises in exact proportion to the peristalsis of the bowel wall proxmal to the seat of obstruction. At first the pain is violent, but it subsides with the progress of the case, becoming more continuous and generally diffused. If the patient be quiet, the pain is so slight that it deceives

the most elect. No stool, no gas per rectum, no detectible swelling at any hernial aperture with continuous abdominal pain and vomiting, demand surgical notice. The temperature and pulse are not reliable. Strangulation by bands will generally give no tender location on pressure and no detectible swelling; and, in fact, I have watched cases with the abdomen quite soft and pliable, with no possible physical point of diagnostic value, not even tympanitis, yet with obstruction which proved gangrenous on peritonotomy. In one case the pain was at first severe, general, and almost subsided the day before the operation, yet fifteen feet of intestine was as red as sunset. The sudden, acute abdominal pain, is not due to the constricting band, but to reflex irritation transmitted to the abdominal brain, where reorganization occurs, whence it is emitted to the whole digestive tract, inducing violent, disordered and wild peristalsis (colic).

Acute, sudden abdominal pain, due to a constricting peritoneal band, is one of the most obscure to interpret. To explore the abdomen in the proper time for such a case requires a wise diagnostician and a bold surgeon. The matters to bear in mind by strangulation by bands are, the acute, sudden abdominal pain with a violent onset, vomiting, and the distinct colicky, peristaltic, periodic character of the suffering, not forgetting a previous history of peritonitis However, the sudden, acute abdominal pain, arising from a strangulation of a loop of bowel by peritonitic bands, is difficult to interpret and seldom diagnosed. It may be asserted, that when a patient is suffering from some grave disease, manifest by sudden acute abdominal pain, the nature of which cannot be interpreted, an early exploratory laparotomy is justifiable and demanded. Such obscure cases require an experienced surgeon, skilled in abdominal work, to meet any emergency to enter the peritoneum and retire rapidly. I remember very distinctly the case of a man, about 40, who gave consent to my colleague, a general practitioner, who was entirely untrained by experience or observation in abdominal surgery. The doctor told me he opened the abdomen and found a band stretching tightly across the right colon. But he said "the colon was black, and I did not know what to do with it, so I closed the abdomen." It is needless to say that the man made a prompt, fatal exit. But most cases die undiagnosed. The danger of strangulation by bands is gangrene and perforation.

The intensity of the abdominal pain in intestinal obstruction depends on the completeness of the obstruction. The pain not being inflammatory is paroxysmal, rhythmical, due to trauma on the nerve periphery in the intestinal wall.

It should be noted that reduction by taxis of a strangulated intestine in the hernial rings ought to be practiced with care. The danger is reduction in mass (without relief) and the return into the peritoneal cavity of pathological intestinal segments. In strangulation, internal, it is well to inquire whether a patient has suffered from peritonitis or experienced peritonotomy.

In strangulation of an intestinal loop the symptoms will practically simulate perforation or extravasating peritonitis only after the sepsis has begun.

Hernia which may involve several visceral tracts (digestive, genital urinary) not infrequently presents unsuspected irritation from the natural hernial rings from the inimical supraumbilical hernia in the linea alba. I have observed much distress and suffering in patients afflicted with hernia which had been overlooked for years.

I assisted Dr. Lucy Waite to operate on a woman some 35 years of age, on whom a previous peritoneal section had been performed. She had suffered from obstruction of the bowels for several days with continuous vomiting. Dr. Waite found an organized peritoneal band of some fifteen inches in length extending tensely across a loop of intestine producing almost complete obstruction. Rupture of the band afforded complete relief with recovery.

INVAGINATION.

Invagination constitutes about one-third of all intestinal obstruction, and the sudden, acute abdominal pain arising from this cause is more easily interpreted. Age signifies much in this case, for one-fourth of all invagination occurs before the end of the first year of extrauterine life, and one-half before the end of ten years. Invagination is a disease of childhood. Its mode of onset is sudden and frequently violent. From some twenty-five experiments in invaginating the bowel of the dog, I am sure the pain is periodic at first. The griping, colicky peristalsis is rhythmic, depending on irritation. At stated times the dog suddenly spreads wide his four feet and arches his back, appearing in severe distress, then gradually recovers his natural attitude. In invagination blood occurs in the stool in 80% of cases (especially children), and the vomiting is not violent, nor even always conspicuous, for the bowel is only partially occluded. Seventy per cent occur at the ileocecal apparatus, that landmark in man's clinical history, 15% in the enteron and 15% in the colon. Invagination

manifests abdominal pain similar to an elongated enterolith in the bowel, which in rotating leaves small spaces at its side for the passage of gas and some liquid stool. I have, unfortunately, watched a case of enterolith day after day, with some half dozen physicians, not becoming able to interpret the abdominal pain or to diagnose the case, until gangrene of the bowel occurred at the seat of the enterolith, when nature asserted manifestation to induce us to explore the abdomen, but with a fatal result. The most skilled of abdominal surgeons repeatedly examined this case, but could not interpret the acute abdominal pain, which came on suddenly, though as the days glided it quietly subsided. The patient was a physician, but could not localize any abdominal pain; it was diffuse. Temperature was about 99½ deg. and 100 deg. F., and the pulse was 85 to 95, almost the whole week of illness. The abdomen was generally soft and not tympanitic. Very seldom can abdominal tumor be palpated in bowel invagination. Shock in young children is quite conspicuous, yet I personally know of two autopsies in infants, who were attended in life by three of the most skilled abdominal surgeons, yet the post-mortems revealed invagination as the cause of death. A skilled and experienced physician, such as the late Dr. Jaggard was called to an eight months' infant and he stripped the clothing to be more thorough in examination, and yet after all his diagnostic skill, failed to locate disease in the digestive tract from lack of symptoms. The child was very pale, cried a little, and died thirty hours after the attack. The autopsy revealed ileocecal invagination.

Sudden acute abdominal pain in a child, may with high probability be interpreted as invagination, especially if one can detect the periodic, peristaltic character, its colicky nature. Blood following in the stool is almost pathognomonic. A tumor will rarely be found, and pressure on it will not generally elicit tenderness, it is not at all likely the patient can locate the seat of disease from pain. Tympanites and vomiting are not conspicuous, and the temperature and pulse are not reliable. The danger of invagination is sloughing of the apex or neck and consequent perforation.

Invagination presenting at the anus interprets easily the cause of pain.

Tenesmus is a prominent feature. In quite a number of cases of invagination during the last fifteen years I could palpate a tumor but twice, and that was once in an adult, spare, woman where the ileocecal invagination had progressed to the flexura coli lienalis. The cause of her invagination was a large ulcer of the cecum, which extensively hypertrophied the cecal wall. I disinvaginated the cecum, however, reinvagination occurred some weeks later when resection of the cecum was practiced with fatal result. Once I could palpate an invaginated tumor in a child.

In actual practice we found at the Mary Thompson Hospital for women and children that shock was the chief fatal factor—the children entering the hospital with advanced invagination, when peritonitis had begun and the pulse was uncountable.

From fifteen years of observation on infant invagination, as they enter the hospital in an a dvanced or late stage of the disease, I am convinced that on the average, more infants will recover from intestinal invagination without an operation than with one. I think actual cases by number will prove this claim —sound unsurgical as it may.

VOLVULUS.

Volvulus is so rare that it constitutes about one-fortieth of all intestinal obstructions, and occurs mainly in men, as women and children are practically free from sigmoid volvulus. As in invagination so in volvulus, I was always compelled to suture them in position in a dog. But I never succeeded in establishing a permanent volvulus in the dog. Volvulus is characterized by tympanites, and it is said by periodic pain. Volvulus occurs at the sigmoid in 60% of subjects at the ileocecal valve in 30%, and in the small intestines in 10%. It is so rare that I have seen partial (physiologic) volvulus, but never complete (pathologic) volvulus in man. Nicholas Senn operated successfully on a man, on the eighth day, for sigmoid volvulus. He introduced a tuck plication in the mesosigmoid for prophylaxis. Seven years later another physician operated on the same man for volvulus, with fatal result. The man had enormous tympanites; his pain is not described as severe, but no doubt the suffering is severe.

At first the pain is periodic, but as time advance it becomes more constant, with now and then exacerbations. Vomiting, though not conspicuous, must arise more or less from trauma to the peritoneum. Perhaps the sudden pain, chronic constipation, and rapid rise of tympanites as would aid in interpreting volvulus, but seldom can one diagnose such a disease from its rarity. Pain no doubt would be referred to the abdominal brain. Most clinicians note tympanites as a conspicuous feature of volvulus.

Weller Hook treated successfully a case of sigmoid volvulus of eight days standing.

From observation of the sigmoid and mesosigmoid in hundreds of autopsies I am convinced that the chief etiology of volvulus of

the sigmoid are elongated sigmoid located in the proximal abdomen and possessing a narrow foot accompanied by mesosigmoiditis due to vigorous action of the left psoas muscle which traumatizes the sigmoid inducing migration of germs or their products through mucosa, muscularis into the serosa, inciting plastic peritonitis in 80% of adults.

The plastic peritonitis in general ends in two methods, viz: 1. The most frequent, the plastic sigmoiditis binds the left surface of the mesosigmoid to the ventral surface of the psoas muscle. Such subjects cannot have sigmoid volvulus from mechanical condition. 2. The second state of the mesosigmoid arising from the mesosigmoiditis is a progressive shortening, a contraction of the base of the mesosigmoid, that is the base of the mesosigmoid becomes a very narrow pedicle from the progressing, contracting mesosigmoiditis, so that peristalsis of the sigmoid induces a rotation of torsion of its base. In autopsies I have found partial rotation of the mesosigmoid, especially during the existence of mesosigmoiditis—as far as 180 to 360 degrees.

Sigmoid volvulus is due to the torsion, rotation, of the narrow pedicle of a mesosigmoid contracted at its foot by mesosigmoiditis. When one untwists, detorsionizes the volvulus and releases it, the sigmoid flies, rotates, like a spring into its original volvulitic condition. To prevent the volvulus from returning to its original torsion in dogs I sutured it in situ resection may be required to overcome the acute torsion. Most subjects have ample time to acquire sigmoid volvulus, as they are generally over 40 years of age. There is frequently physiologic sigmoid volvulus in autopsy which is partial torsion of the mesosigmoid, however, obstruction is incomplete. The marked tympanites of sigmoid volvulus is at first localized in the left iliac fossa—a slight diagnostic point of the sigmoid is the most varied of any segment of the colon in loctaion and capacity of its lumen. The tympanitis may be located in the right abdomen while the non-tymphatic loop may be forced around the constricted foot of the volvulitic sigmoid. Childhood is not predisposed to sigmoid volvulus, notwithstanding the relatively elongated sigmoid and mesosigmoid, because the angle of mesosigmoid insertion (what I term von Samson's angle) is located well proximalward on the lumbar vertebra. Why woman is practically free from sigmoid volvulus I am, so far, unable to explain. Sigmoid volvulus occurs practically in men possesssing what I term the "giant verticle sigmoid" which are located in the proximal abdomen and occurred in perhaps 15% of the autopsies. The foot of this giant verticle sigmoid is narrow and by the contracting mesosigmoiditis results in a narrow style around which may rotate the sigmoid loop. This was the condition I found in physiologic volvulus which occurred in perhaps 2% to 3%.

[To be continued.]

THE RELATION OF MAN TO NATURE (A STUDY PROMPTED BY "TESTIMONIES OF THE SEPULCHRES").

ALBERT S. ASHMEAD, M. D.

NEW YORK.

FIFTEENTH PAPER.*

There is no thoroughfare to science. Luther Burbank, the vegetable wizard of California, who, setting aside a well-known verse of scripture, has induced nature to reproduce according to his will instead of each species after its own kind, is announced as a convert of the new doctrine of eugenics. This doctrine—by the way, a very old one dressed in a new name—relates to the bettering of the human species by more careful breeding and child culture. Mr. Burbank speaks of children as "the most precious and pliable product of the ages," and says what "the scientific breeder is called upon to do is to inaugurate a system of selective weeding." The spirit of old Lycurgus, if it keeps in touch with affairs, must invisibly applaud the vindication, in the name of modern science, given to the principle of the "weeding" out methods which he introduced on the Spartan hillsides.

But it may be doubted whether Mr. Burbank will be as successful in eugenics as in plant transformation. It may be true that better bodies may be secured for the remainder by removing the deficient. It may also be true that brain lobes can be developed as the cattle-breeders have developed loins in short-horn cattle. But if there is to be weeding it will always be some one else's darling, not our own, which must feel the scythe of the aberuncator. Like Artemus Ward, who was willing that his wife's relatives should be sent to the war, we would confine the scheme to other people's children. For our own we propose to preserve with small regard to the effect on the species. Moreover, for such is one of the most abiding mysteries, the more they are crooked and lack, the more we cherish. Survival of the fittest may be the ruthless law of nature, but

* The first paper of this series appeared in the MEDICAL FORTNIGHTLY issue of April 25, 1905.

human nature seeks to repeal it; moved by an instinct which is in the very fibre of being it seeks to secure the survival of the unfittest.

Mr. Burbank should confine himself to his plants and flowers—to the solution of such problems as he is capable of solving. Science, although she is a most valuable servitor, and has given many suggestions which are helpful, is not to be made sole guardian of the children. Perhaps her way would be the best one, but she will not be allowed to try it. An Indian fable tells how Glooskop, the hero god, after conquering all his enemies, rashly tried his hand at managing a certain baby, Wasis by name, and was soundly punished for his rashness. There never has been an exact science of child nurture, and probably never will be. There are some things past finding out—some truths that are not respected even when found out. The child may be a

> Poor stumbler on the rocky coast of woe,
> Tortured by pain each source of pain to know.

Nevertheless, stumbling parents will continue to help the stumbler according to the good old hit-or-miss plan, no matter what the din of the eugenics.

"The Greeks were impressed, as all peoples and generations have been, with the mutations of fortune the vicissitudes of human life. Their observations and experience had taught them that long continued good fortune and unusual prosperity often issue at last in sudden and overwhelming calamity" (Myers Ancient History, Ed. 1904, p. 137).

Thus was acknowledged long, long ago, from a period almost wholly pre-historic, the great principle of nature—the law of demolition.

Mr. Burbank, the creator of his flowers and plants and vegetables, the products of his intelligence, gives them his watchful solicitude during their lives; he forgets and neglects them not. He preserves them from enemies in the soil and in the air; and sees to it that he introduces no noxious element; he seeks to know their needs, and their needs to supply. He endeavors to make their world favorable to their highest development to their e-volution, their progression.

To that Eden, no serpent or weed is allowed entrance to corrupt, to destroy; but, rather, is beauty, and strength and charm, and value conserved.

Nor in that abode is to be found any voluntariness to which evil can address itself—for is not its creator on guard to keep evil out rather than to introduce evil and lurk in the bushes to watch the overthrowing work?

This fungiferous Sparta is not expected to go out to war, to be contaminated by the world at large; and, likewise, it is so protected that the passes on its surrounding walls are defended in its behalf. Why this admirable condition in this little world?

Because its god is solicitous for the welfare of its individuals.

Let not the captious critic here hasten to say that its god cuts and slices, and stings and transfers, and takes away, and adds and lops off and binds on; the dwellers feel no pain.

In the Sparta of old it was the body alone that was cultivated as in this vegetal Sparta it is the body that is cultivated—for in this Sparta there is no mind, all is plasticity of matter subject to the formative intent of its creator, and his moulding hand.

Here the metaphor ends. The Sparta of old passed away; the animal Sparta; the warring Sparta; the merciless Sparta; the hideous Sparta; the Sparta devoid of tenderness; the Spartan mother who said: "Go, return with your shield—or upon it;" the child bred as an animal.

In that Sparta the mind was not permitted to grow; it was not recognized except as a power to move the body in the interest of the whole state as a war body.

Is it seriously to be contemplated that human effort can avail against the great law of Nature that will at last reduce to mere memory the vegetal Sparta at Los Angeles? Can man, a mere growth incidental on the shores of time say to himself, for himself, I will, or I will not! No! He is as much a product as are the products of the field; and his special cultivation here and there by his individual self appointed teachers and educers cannot specialize him as an exception to the great law of change; he must go when and whither he is driven. He is here to suffer; he cannot escape. "Man is a shaken reed in which the soul, that air, doth ever rustle and repine" (Omar).

His epitaph may be—"He would have been better, if his creator had permitted."

THE END.

RUPTURE OF THE CORONARY ARTERY —A CLINICAL REPORT.

J. S. DEAN, M. D.

WHEATLAND, IA.

THE following report is of a very unusual case and one which is so rare in the literature that I think it is my duty to publish it.

I was called on June 5th, 1905, to attend Mrs. A. L., found the patient breathing with great difficulty and expectorating frothy mucus. She was in a sitting posture, and un-

able to lie back in the chair. Previously her health had been good except for occasional headaches. She is mother of six children. She had been well at bedtime and the dyspnea came on abruptly at 10 p.m. The pusle was intermittent and labored, 60 per minute. On auscultation, I found loud blowing from fourth to sixth intercostal space. The heart was laboring so intensely that lifting was plainly seen through chest wall. There were no valvular murmurs, but a very distinct churning sound, and many coarse rales over the left lung.

I gave thirty minims of ergot, hypodermically, followed by twenty-five minims of adrenalin chloride, 1:1000 (P.D & Co.) as soon as it could be obtained. This dose was repeated in thirty minutes. Patient began to be relieved in thirty minutes. In two hours she could lie down. At 10 a. m., on June 6th, she was quite comfortable. Adrenalin was continued in ten minims doses per os for three days, followed by eight grains of potassium iodide every three hours, until the clot was absorbed. The lifting of the chest wall gradually subsided and at end of a month the heart action was normal.

This was evidently a case of rupture of a branch of the coronary artery, and the interesting points about it are its abrupt beginning, the patient's previous good health, the sudden increase in bronchial secretion and the prompt subsidence of the symptoms after the administration of adrenalin.

After six months of good health, the patient became excited about a fire occurring in town, and the former symptoms recurred. I was away from town and did not see her until one hour after the beginning of the attack.

There was more bronchial secretion than in the first attack, at least one pint. The finger nails and lips were cyanotic, skin clammy and there was extreme dyspnea. The heart action was very labored. The physician who had been called in my absence administered 1-65 grain of atropine sulphate and sixty minims of adrenalin chloride, 1:1000, by the mouth. I at once administered twenty-five minims of the adrenalin hypodermically and repeated the dose in twenty minutes. Patient began to feel relieved in fifteen minutes. Cyanosis had disappeared in an hour. In two hours she was able to lie down. The bronchial secretion and rales were absent the following morning. The same treatment as in the previous case was followed, except that fluid extract cactus grandiflora was given for ten days.

In this second attack the action of adrenalin was positive. In the first one it was not possible to draw conclusions because ergot had been administered. Adrenalin by the mouth failed to give results, but relief was immediate after preparation was administered hypodermically. It is now three weeks since the attack and the patient is doing well. The clot is nearly absorbed.

February 15th, 1906.—Patient remains in good health. Heart action normal. Clot entirely absorbed, judging from absence of any murmurs and lifting of chest wall.

There is no question in my mind as to the presence of pulmonary edema in this case, and I am not cognizant of anything in my report to lead any one to think otherwise.

Furthermore, pulmonary edema is not, as a rule, classed as a distinct disease, but rather as a condition secondary to some pre-existing pathologic condition. It is more in the nature of a symptom than a distinct entity.

The point in favor of my diagnosis and against that of pulmonary edema, except as a secondary condition to the real causative pathological condition to the lesion, are:

Etiology (Butler).—Most commonly associated with pneumonia, cachexia carcinoma, grave fatal anemias, acute and chronic nephritis, acute fevers with heart weakness, cardia valvular disease, cerebral apoplexy or injuries. Osler, Strumpel, Thompson, etc., give these same causes and add no more to them.

Physical Signs.—Impaired resonance, or slight dullness over the base, with absent or weak, perhaps broncho-vesicular breath sounds. There are abundant large and small rales of an unusually liquid character over involved areas.

Symptoms.—Increased dyspnea, cyanosis, cough and an abundant frothy, watery, rarely tenaceous expectoration, which may be blood-stained if congestion is present; fever absent unless due to febrile condition.

The symptoms and physical signs were as above described in the case reported, except that the sputum was not blood-stained.

The points which might easily have been misinterpreted were:

The absence of any valvular heart lesion, dilatation or hypertrophy; the labored action of the heart not rapid; the churning sound, as if the heart were laboring in a thick fluid; the lifting of the chest wall from the third to the sixth intercostal space, with no marked dispacement of the heart, with no evidence of contraction of the lung, the continued lifting of the heart after edema was entirely relieved and expectoration had ceased. The only conditions that would have caused the lifting of the chest wall besides the condition diagnosed by me would be hypertrophy, dilatation or dilatation of the ventricles.

Not one of these conditions named could have been present without displacement of the heart or signs of dilatation or hypertrophy, none of which has ever been present in this case, and she is at present doing the house-work for her family of four persons.

As to whether my diagnosis of rupture of the coronary artery was correct, since the question has been raised whether the case could not be more properly called one of pulmonary edema, I wish to cite a second case in which the symptomatology very nearly duplicated this case, but which did not recover and the exact pathology was disclosed by a post-mortem examination, which was fortunately obtained.

Patient, aged thirty months, had had a mild attack of spasmodic croup three days previous. I was called in haste at 7:30 a.m. Found patient cyanosed, breathing with great difficulty, coughing, but not a characteristic croup cough. Pulse 110. Temperature not taken. Parents thought it an attack of croup. I saw that a croupous condition was present, but that it was not true croup; that heart action was too labored, chest wall was lifting, no murmurs, many coarse rales and bronchial blowing sound. Child acted as though there were some obstruction of the large bronchi. The parents assured me that the child could not have gotten any foreign body into the lung. I told them the child could not live. He became more cyanosed, covered with clammy sweat, respiration became more difficult, cough more harsh, heart action became still more labored, and death ensued in one and one-half hours.

The parents seemed dissatisfied. I told them, "This was an unusual condition, and that if I had made a mistake I wanted to know it and so did they. Allow me to hold a post-mortem." They consented. Result: Pericardium distended with blood until the left lung was contracted from the pressure to one-fourth its normal size. Coronary artery ruptured.

I had no adrenalin with me. In fact, thought the case one of pulmonary edema, but could not satisfy myself as to etiology. The symptoms in this case were the same as in the first case reported, except that the cough was more aggravated, and of a croupous character. I believe both these cases to be the same in pathology, except that a small branch only was ruptured in the case reported, while a large one was ruptured in the case lost. I don't know whether I could have saved the second if I had made a proper diagnosis and used adrenalin.

In closing, it may be of interest to cite a very severe case of edema of the glottis and vocal cords, which was promptly relieved by the hypodermic administration of twenty minims of adrenalin, followed by ten minims administered by mouth every three hours, allowing it to pass slowly into the throat. Patient was unable to swallow anything and nearly strangled to death. Next morning could drink milk with comparative comfort. Patient six months pregnant. This illustrates the power of adrenalin to relieve edema as well as to control hemorrhage.

May 23, 1906.—Examination of Mrs. J. L. today shows perfect valvular action. Heart beating 78 per minute. Very slight lifting impulse. Apex beat one and one-half inch from nipple toward median line. Scarcely perceptible hypertrophy of left side of heart. Patient in good health. Has not even had headache for some time.

UNILATERAL ASCENDING PARALYSIS AND UNILATERAL DESCENDING PARALYSIS AS NEW CLINICAL TYPES.*

CHAS. K. MILLS, M. D.

PHILADELPHIA.

In 1900 Dr. Mills first called attention to unilateral ascending paralysis or progressively ascending hemiplegia as a new clinical type. Several cases have been recorded by him, and others by Spiller, Potts, Patrick and Newmark. The clinical picture in these cases is that of a paralysis beginning in the leg and gradually extending to the arm of the same side; the face in some instances becomes involved, and in some the paralysis passes to the leg of the other side, giving a triplegia. The disease in typical cases, according to the suggestion of Dr. Mills, which was confirmed in one case by necropsy and microscopical examination, is due essentially to primary degeneration of the crossed and direct pyramidal tracts, although other forms of degeneration may enter or be added.

Attention has also been called by Dr. Mills to the fact that the progressively developing paralysis might take a descending instead of an ascending form, although the latter was more common than the former. He was able, through the courtesy of Dr. William Pickett, to present to the Philadelphia County Medical Society an interesting case of unilateral descending paralysis, the case having been recognized by Dr. Pickett as belonging to the type described by Dr. Mills. The paralysis first attacked the left upper extremity, gradually becoming more pronounced. It became noticeable in the

* Abstract of a communication presented to the Philadelphia County Medical Society, May 23, 1906.

lower extremity about a year after its inception. At the time of examination this paralysis was marked in the upper as well as in the lower extremity, and was more pronounced in the distal than in the proximal portions of the limbs. The reflexes were all exaggerated on the affected side, a typical Babinski response being present. The paralyzed limbs exhibited very moderate wasting. The face and head were not involved.

DOSES: "MAXIMA AND MINIMA."

J. R. LANDERS, M. D.

BERNADOTTE, ILL.

In acquiring desirably adequate knowledge of remedies and their utility, and establishing a dependable therapy, and at every step in improvement and reliable progress we meet many problems in "maxima and minima" and a trustworthy advancement, or any advancement, demands their solution—personal solution. The first question with the patient is how he can get the greatest relief in the shortest time at the least expense. The first problem for the physician to solve is what remedy will cure the patient in the shortest time at least expense. When the remedy has been decided on the next question is, what preparation of that remedy is most desirable and of utility competent to the needs and demands in greatest measure—give quickest relief in shortest time at least expense and with greatest certainty? To answer this personally satisfactory we must give study to the different preparations, honestly investigate and find which have most favorable qualities, least unfavorable to determine which deserves our preference.

Personal knowledge is essential to confident understanding and application. Simple half possession or understanding is oppressive till digested. It needs the solvent action of personal thought to render assimilable and of individual utility.

We must transfer the thought, feeling, opinion or conviction to ourselves and thoroughly digest before we are capable of separating and differentiating fact and fancy, truth and error. Until we have done all this and weighed carefully we are not entitled to an opinion, or rather conclusion.

Knowledge and honest conviction must be properly derived. We cannot stand afar off and without reasoning or giving personal thought cry "contrary to theory or hypothesis" and "conservatism." This is but "impression" and not from settled judgment. There are questions to answer and problems to solve, and they require personal thought and settled judgment. Conservatism does and has neither. We have no record of "conservatism" ever making an invention, discovery or amendment, a progressive observation, or even saving a life. Conservatism would still think it well enough to get the least possible with greatest possible amount with greatest possible expense.

Therapeutic betterment and progress mean directly the opposite. The alkaloid and active principle solve many problems in "maxima and minima." They give us the greatest possible effect in the shortest possible time with least possible material at least possible expense; the greatest number of remedies in greatest quantities to meet the greatest emergencies with least delay with least inconvenience, occupying least space (a pocket case), consequently the physician carrying them is best armed, and most often competently armed. We might multiply indefinitely, but this is sufficient to evidence that the active principles are pre-eminently desirable and useful above any and all preparations of which we have any knowledge, personal, hearsay, rumored or reported. They represent the ability of greatest effect with greatest certainty at least expense, least inconvenience, delay and most pleasant. They possess the desirable in greatest measure. No valid or effectual weapon in the form of objection or argument has been raised against them.

Such arquebuses as "dangerous" and that "the alkaolid or active principle does not represent the whole plant" are obsolete, inoperative, impertinent, if ever otherwise. And the statement that "the more rational and scientific method is using the entire plant" must be put down as due to ataxophemia, for certainly no one means to claim that guess work uncertainty is more "scientific and rational" than accuracy.

In commercialism only is objection founded manufacturers who aim at highest standard and whose goods have proven most reliable have not decried active principles to our knowledge.

Pharmacologists of highest attainments, the most trustworthy leaders and teachers say, "The alkaloids are unquestionably the most important, etc. Who can fathom the benthal depths of galenic uncertainty, and to which depths the physician who uses them may at any moment be plunged. Surely we should get as far away from faults, defects and inaccuracy as possible. Surely we should not tolerate an element of uncertainty if possible to eliminate it. The active principle preparations represent those from which uncertainty has been eliminated in the greatest

degree. Who has suggested the best is too good? Who intimated we could be too potently armed, too competently prepared to fight disease?

If we are sane we would surely demand certainty and stability and desire celerity, then the preference must be for the preparation possessing stability, certainty and celerity at prices not prohibitive. Variability and uncertainty may mean death, and to our utter surprise as well as chargin, when stability and definite dosage would have meant life, and who can appraise its value or when once gone, give it back? Only yesterday a brother practitioner was lamenting the loss of a patient, the burden of his cry was, "I do not believe the remedy was good or up to standard." The case was one of those in which effects must be had with "certainty and celerity," or death results; no time to spend here or there, or try something else. If remedial effects are not quickly had life is gone —no time to try something else. We feel assured that the brother referred to will see to it, as best he can, that next time he is supplied with the preparation of his confidence and preference. Varying and contradictory experiences can scarcely be accounted for outside of instabilty and varying strength of drug used, it matters not what the preparation.

Our plea is for the alkaloid and active principle, and our contention is that they are stable; do not, cannot vary in strength, though they may vary in quantity in different specimens. Consequently, the only source of uncertainty and ineffectiveness must come from adulteration knowingly or through ignorance—through ignorance in not understanding how to separate and isolate from associate constituents or added material necessary in obtaining the desirable and useful part. But when correctly isolated we have the greatest power of certain effect, the smallest bulk, the smallest dose with which effects may be had in shortest time at least expense and most pleasantly.

Then how eminently superior, these preferences seems a natural selection, consectary. And this verdict is rapidly rendering, survival of the fittest. It is enough to fight cause and contagion, dirt and disease, germs and generalities in infancy and infection without at last being compelled to conclude from exasperating, overwhelming evidence that our fight was a failure on account of inferior, uncertain remedies.

The ratio of capability and desirability of active principles to that of galenics is too evident to need a mathematical calculation to determine or understand. It is unnecessary to say anything in defence of active principles—they need no defense. The indications are that they need only to be understood to be appreciated and preferred. None who have understood them and become familiar with their use has been guilty of such "adultery"—yes that's the word—as to transfer their affections, or rather confidence and preference to unreliable fluid remedies—none to my knowledge. The definite active principle gives us a therapy not emasculated of such important features as stability and certainty which is absolutely essential to confident and competent therapeutic resources.

Fresh-Air Homes and Medical Work in Connection With Them.—Linsly R. Williams describes the advantages of a vacation at Sea Breeze. The welfare of the children is carefully looked after in every detail. The writer urges all physicians who are engaged in hospital and clinical work during the summer to have each hospital and clinic supplied in the spring with a list of all the fresh-air charities, and to see that list is used. If all suitable cases were referred to the fresh-air charities the demand would more than exceed the supply. But such a demand in New York is never unheeded. In time it would result in the formation of a joint application bureau which would relieve the hospitals and dispensaries of detailed search for fresh air for individual cases, and in the building of more numerous fresh-air homes for the deserving and poor.—Medical Record, June 9, 1906.

The Stomach Douche and its Application.—M. Gross gives as strict indications for the introduction of the stomach tube for therapeutic purposes: Acute toxic inflammations, intoxications, and ileus; old mucous or nonmucous gastric inflammations; a small number of sensitive neuroses, hyperesthesias, chronic ulcerative affections, erosions; anomalies of secretion, or chyorrhea; and disturbances of motility in both atonic and mechanical gastrectasia. The tube which the writer has used during the last few years differs from the ordinary tube in that it is provided with an end opening and a number of small, pinhead-sized lateral holes which perforate the walls of the tube in different directions. The action of this stomach douche is mechanico-chemical, thermic, or both. A loose hard rubber valve is placed at the large end aperture, which it tightly closes as the fluid is injected. As the upper end of the tube is lowered, the outflowing stream pushes the valve up.—Medical Record.

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A REPORT OF TWO CASES OF TRICHINIASIS AND REFERENCE TO FOUR OTHER CASES INFECTED FROM THE SAME SOURCE.

EDMUND F. TAAKE, M. D.

ST. LOUIS.

CASE I.—Katy K.; admitted to the City Hospital, February 10, 1906, 5:25 p.m. Age 23 years; married; a native of Austria (in America one year); resides at 1709 S. 10th street, St. Louis, Mo.

No intemperate habits. Married about two and one-half months; husband is 27 years old and is healthy.

All of the patient's relatives have been healthy, well-developed individuals. The patient states positively that she has never been sick before.

On December 30, 1905, this patient's family and a neighboring family bought a hog which they divided. On January 1, 1906, the patient began eating of this meat, some of it raw. January 20, 1906, the husband and sister-in-law (the other two members of the patient's family) became sick. Two days later, January 22, this patient took sick. About the same time the other family referred to above, sickened. The initial symptoms were severe diarrhea, nausea, profuse perspiration, edema of the eye-lids, great prostration, some fever. In a few days the diarrhea abated, and the edema extended to the legs and feet. At this time there was a rather sudden onset of pain, which pain has been almost uniform in severity since then. The pain is increased by movement and by palpation of the parts.

The patient describes the pain as a sharp, sticking, pulling pain. Since the pain has begun, walking is impossible, and there is stiffness in all the joints of the body.

Perspiration has been almost constant and very profuse since it began.

A cough which the patient had some time before taking sick, has continued—the patient thinks it has improved of late.

Physical Examination.—Physical development is excellent; all parts of the body are symmetrical and well formed. The patient is well nourished and muscular. The weight is about 155 pounds; the height about 5 feet 4 inches. The chest expansion is good. The breasts are rather large. The abdomen protrudes somewhat. The surface of the trunk and extremities looks edematous and there is decided pitting on pressure of legs and feet. A number of white striae are seen on the anterior and upper part of the thighs—probably fat striae. The skin is moist and pale in color. The mucous membrane of the lips is dry, fissured and scaling. The tongue is clear. The patient lies flat upon her back, she is unable to change her position. The extremities are flexed at the elbows and knees and extension to the normal limit is impossible. All parts of the trunk and extremities are painful to palpation. The pulse is weak and rapid. On auscultation, moist rales are distinctly heard over the lower part of both lungs posteriorly. The knee-jerk is absent. Stimulation of the soles of the feet causes but slight movement of the toes.

Present Condition of Patient.—Temperature 103 deg., pulse 30, respiration 32; severe pain, great muscular weakness, extreme prostration; dyspneic; annoying dry cough; constipated.

Laboratory Findings.—Urine, negative. Muscle.—A small bit of the gastrocnemius muscle removed from patient contained a great number of non-motile trichinae. A piece of muscle was taken from the ham of the hog which was supposed to be the source of infection. It contained a large number of encapsulated trichinae. Stool.—Not examined. Blood.—See special report.

Course of Disease During the First Ten Days in Hospital.—The temperature was irregular. It fluctuated between 98 and 102 deg. The greater part of the time it was 99 deg. The respiration varied from 24 to 48 per minute. The average was about 32. The respiratory movements were shallow and regular. The pulse varied as the temperature, ranging from 104 to 136 per minute. The average was about 125. At times the pulse was very weak—hardly, perceptible. Perspiration was continuous and profuse, except

when checked by medication. The cough increased in severity up to the seventh or eighth day when it became less annoying to the patient. The pain was constant during the first eight days, excepting when it was checked by analgesics. After the eighth day the pain gradually subsided. As previously stated, there was persistent constipation when the patient entered the hospital. Within twenty-four hours this was relieved and the bowels remained loose—cathartics being given for that purpose.

On the second day after entrance to the hospital, there was incontinence of urine and delirium. The edema of the legs and feet persisted during this period, that of the eyelids had almost disappeared when patient entered the hospital.

CASE II.—Lena K.; admitted to the hospital at same time as Case I. With very few exceptions, the history, physical examination, laboratory findings, course of disease, etc., of this case, corresponded in every detail to that of Case I. Therefore only the differences will be noted. The first symptoms appeared January 22 (two days earlier than in Case I). There were no gastro-intestinal disturbances; the cough was not so severe; the perspiration was less profuse; probably there waslesspain; the muscular weakness and prostration were less pronounced. The variation above normal of the temperature, pulse and respiration was somewhat less than in Case I. At no time was there incontinence of urine nor delirium. Improvement began about February 14th, about five days earlier than in Case I.

KATY K.—BLOOD COUNT.

(600)	Polym. N. 1.	Monon. 1.	Eosinop.	Mast. c.
2-13-'06...	86⅔%	9⅙%	3⅚%	⅔%
2-24-'06...	71⅔%	24 %	4⅔%	0 %
3- 6-'06...	56⅚%	36⅙%	7 %	0 %
3-11-'06...	51⅔%	33 %	15⅜%	⅙%
(400)				
3-16-'06...	45¼%	41 %	13¾%	0 %
3-21-'06...	42½%	38 %	19 %	¼%
3-25-'06...	34½%	40¾%	24¼%	¼%
3-31-'06...	32¼%	52 %	15¼%	¼%
(300)				
4- 6-'06...	32 %	56⅔%	10⅔%	⅔%
4-13-'06...	28⅔%	53⅓%	16⅓%	⅔%
4-20-'06...	31⅔%	44⅔%	23⅔%	⅔%
5- 2-'06...	27⅓%	55⅔%	16 %	1 %

LENA K.—BLOOD COUNT.

(600)	Polym. N. 1.	Mono. N. 1.	Eosinop.	Mast. c.
2-13-'06...	82⅔%	13⅚%	3⅓%	⅙%
2-24-'06...	76⅚%	20⅚%	2⅔%	0 %
3- 6-'06...	54⅚%	32⅜%	12⅜%	⅙%
3-11-'06...	56⅔%	23⅜%	20⅙%	0 %
(400)				
3-16-'06...	50½%	33¼%	16¼%	0 %
3-21-'06...	43¼%	30½%	26¼%	0 %
3-25-'06...	42½%	30 %	27¼%	¼%
3-31-'06...	40½%	36½%	22¼%	½%
(300)				
4- 6-'06...	46⅔%	43⅓%	10⅓%	1 %
4-22-'06...	52 %	37 %	10⅓%	⅔%
5- 4-'06...	42 %	45 %	12⅓%	⅔%

BLOOD OF LENA AND KATY K.

About one-half of the cells enumerated as eosinophiles, in counts "2-13," "2-24" and "3-6," are not typical eosinophiles. They are polymorphonuclear leucocytes containing numerous small granules, which granules are irregular in shape and take a distinct eosin stain.

In making these counts it is a difficult matter to decide which cells shall be classified as eosinophiles, and which as polymorphonuclear neutrophiles, as there are so many grades of cells between the typical forms of each.

In counts "3-11," "3-16," "3-21" and "3-25" most of the eosinophiles are typical. The granules are large and spherical and the cells appear to be larger than in the former counts.

A marked change is noted in the eosinophiles, in counts "3-31." The granules do not stain so brightly and most of the cells are vocuolated—apparently they are degenerating.

But few of the eosinophiles are vocuolated and the granules stain well with eosin, in counts "4-6" and "4-13."

In counts "4-20" and "5-2" (Katy K.) and in counts "4-22" and "5-4" (Lena K.) the eosinophiles are typical excepting that some of them are vocuolated.

All of the blood smears were stained with a reliable preparation of Wright's stain.

FOUR MORE CASES INFECTED FROM THIS SAME HOG.

I did not attend these cases and could not obtain a complete history. These cases are: Anton K., age 27 years (husband of case I), Nick L., age 31 years and Barbara L., age 25 years (husband and wife, and their daughter, age 4 years.

One case experienced no gastro-intestinal disturbances, the other three cases did.

Two had cough, the other two had not.

The child had a cutaneous eruption, which the physician in charge described as being very similar to that of varicella.

All of these four cases presented the following symptoms and signs: Fever, profuse perspiration, edema of the eye-lids, intense pulling pains in the muscles, stiffness of the

joints, great muscular weakness and prostration.

Laboratory Findings on Anton K.—Urine, negative. Muscle, numermous motile trichinae. Blood, eosinophilia negative. These laboratory findings are about three weeks after the beginning of sickness. For later blood findings see special report below.

ANTON K.—BLOOD COUNT.

(300)	Polym. N. 1.	Mono. N. 1.	Eosinop.	Mast. c.
3- 8-'06...	31⅔%	20⅓%	47 %	1 %
3-25-'06...	34⅓%	40 %	25 %	⅔%
3-31-'06...	39 %	32⅔%	26⅓%	2 %
4- 6-'06...	41⅔%	42⅔%	13⅓%	2⅓%
4-13-'06...	32⅓%	42 %	23⅔%	2 %
4-20-'06...	36⅔%	50 %	12⅓%	1 %
5- 2-'06...	42 %	53⅓%	5½%	⅓%

MRS. L.—BLOOD COUNT.

(100)	Polym. N. 1.	Mono. N. 1.	Eosinop.	Mast. c.
3-31-'06...	28%	56%	16%	0%
(200)				
4-22-'06...	30%	55%	15%	0%

MR. L.—BLOOD COUNT.

(100)	Polym. N. 1.	Mono. N. 1.	Eosinop.	Mast. c.
3-31-'06...	36%	43%	21%	0%
(200)				
4-22-'06...	51%	37%	10%	2%

A differential leucocyte count was made on the blood of Anton K. 2-13-'06, by a competent pathologist, who reported eosinophilia negative.

As far as the examination was made, the blood of Anton K. and Mr. and Mrs. L., corresponded very closely to that of Katy and Lena K.

CONVALESCENCE OF THE SIX CASES.

The pain, cough and edema gradually subsided. The pale color was replaced by one of health. In fact the convalescence was like that of any severe wasting disease.

The convalescent period in case I was about eight weeks; in case II about six weeks. Anton K. required about four weeks to convalesce and the L. family about three weeks.

At this time, May 1st, Baby L. is in excellent health. The other five cases are doing hard manual labor. They complain of being very tired and of having pain in the muscles after a hard day's work.

In concluding, the writer wishes to call attention to the following points in the cases on which a differential blood count was made. Eosinophilia did not develop until the patients were convalescing; and that the percentage of eosinophilia varied inversely to the severity of infection.

DISCUSSION.

Dr. D. Arthur Hughes* stated that this was his first experience in coming in contact with patients actually suffering with this disease. Referring to the symptoms discussed by Dr. Taake, he believed it was true that there were no particular symptoms that would distinctly diagnose the disease; but that one or another of the symptoms mentioned usually were found. The point that impressed him, and which he believed was most important, was the fact that these patients not only ate partly cooked pork, but also uncooked pork from this pig. This was a point that should always be borne in mind.

So many persons were apt to eat pork uncooked, and after eating uncooked meat in which this disease was present, there would be found in the patients the intestinal symptoms that Dr. Taake had given. Dr. Hughes was interested in trying to prevent such diseases in man as much as possible. He had been in the service of the Bureau of Animal Industry, U. S. Department of Agriculture, since 1903, a service which has to do with the infection of all animals, before and after death, which are to pass in the channels of interstate or foreign trade. However, the inspection of pigs for the disease in question, trichinasis, was made in the case of swine destined for certain countries with which we have a large export trade. These countries were Austria, France, Germany, Denmark and Spain. During the official year which closed the middle of last June, there was inspected for these countries.

From page 16 of the report of the Chief of the Bureau of Animal Industry the speaker read the following:

Total inspections of pigs for trichinosis 315,015. They were classified as follows:

Class A, free from the appearance of trichina 307,621, this being 97.64 of the whole.

Class B, containing trichina-like bodies, by which he said he supposed they meant disintegrating trichina, 4,773, or 1.52%.

Class C, containing live trichina 2,015, being 0.81%.

This microscopic work was done by experienced inspectors and as thoroughly as should be expected. The pork was really examined three times, and sometimes oftener. Under the second class, the trichina-like bodies, the inspectors looked for those trichina which were encapsulated, having gone on to calcification. The 2,015 in class C were condemned.

However no danger was to be feared from the consumption of infected pork, providing

*D. Arthur Hughes, Ph. D., M. D., Cornell University, now inspector of Food Supplies, Commissary Department, U. S. Army, 82 Live Stock Exchange, Chicago.

it was cooked; this was the first way of getting rid of the disease in the meat. Second, if the pork was heavily salted, that would destroy the live trichina and pass the meat over to class A. Moreover if the pigs were pickled for an extensive period, there was no danger whatever; nor if they were cooked and put up in canned form. As a general thing, these animals were not allowed to be returned to the owners, but were tanked, by which he meant to say that they were put into great heaters and made into fertilizer for the soil.

The millions of swine slaughtered for the interstate trade and not for the export trade these were not examined for trichinosis. The doctor thought they should be, but believed the reason this was not done was that so little of the disease seemed to be found in the country at large, that the government had not deemed it advisable to examine the pork for this disease, where the meat was to pass into the interstate trade. No alarm need be felt, the doctor said, on this account. While some countries required the examination, there were other great countries which do not require the examination, as they had come to the conclusion that there was little danger from American meat. Those countries which did not require the examination included all those not mentioned as requiring it; for instance, Great Britain. These countries took thirty-five million tons of American meat, meat products, and dairy products last year, a large portion of which was pork.

To lead into an explanation of the fact that there was so little of this disease in American swine, attention was called to the fact that in Germany there was a great deal of it in the swine, the statement having been made that one in every five hundred pigs have the disease in Prussia, in Saxony more, and in West Germany less, the reason being that in Germany the swine did not run at large, as on our great American plains; they were penned up, and likely to devour many rats and mice, and these were the great means of communicating trichinae to the swine. This is true, though the fact is known to the Germans that 10 to 20 per cent of the rats and mice have the disease. It was probable also that the disease was more common and prevalent in Germany for the reasons that the Germans not only eat the animals that we eat in America, but also eat dogs, horses, donkeys, etc. Persons in Germany therefore got the disease not only from trichinous swine, but also from dogs. Dogs are notoriously infected with trichina. Swine in this country were comparatively free from the disease, because they were not penned so much: they followed the cattle, ate grain, and were in the open; they did not eat rats and mice, which communicate the disease to them.

There were sporadic cases in this country, but when they occurred they were traceable, as in this case, to the eating of pork that was uncooked.

How common the disease was in St. Louis, the speaker was unable to say, and was also unprepared to go into a discussion from the standpoint of the human medical literature, but he believed that but few cases were spoken of in American medical literature that were due to causes other than eating uncooked food containing the larval form of trichina spiralis.

Dr. Soper inquired what the inspectors looked for in swine.

To this Dr. Hughes replied that the attention of the inspectors was chiefly directed towards the detection of tuberculosis and other communicable diseases, where the communicability came from bacteria rather than from parasitic origin. The parasitic diseases that were communicable to man were found to be so rare that the inspection was not so strict on that point as it was with reference to bacterial diseases. Tuberculosis was found to be very common in pork, and a great deal was condemned for that, great quantities of swine being full of tuberculosis lesions.

When the animals were large and fat, it would hardly be thought that they were tuberculous, but this was frequently found to be true. These were condemned, and deposited in the tank. The speaker stated that the inspectors were not satisfied, with putting the animals into the tank with the expectation that they would be treated so as to produce fertilizer, but that the government seal was also placed upon the tank, and the steam is turned on. All of this was done under rigid supervision. Packing house owners had found to their sorrow, when trying to get anything out of a tank sealed by a government official, that Uncle Sam was a very hard customer to deal with.

Besides tuberculosis, hogs were inspected for swine plague, hog cholera and the like. It was not thought that these diseases, as such, were communicable to man, but if meat was eaten from a hog having hog cholera, it would produce chronic diarrhea. Pigs were also examined for injuries of all kinds and local diseases, for pregnancy, etc., and all of those things which make the flesh uneatable, unpalatable, or disagreeable because of sentiment or effect.

Dr. Deutsch inquired whether the disease in the animal resembled the disease as we see it in man.

To this, Dr. Hughes replied that the similarity was not a similarity, but that there was an exact reproduction in swine of the pathological appearances. The lesions of the disease in swine closely resemble the post-mortem findings in cases of tuberculosis in man.

Dr. Hughes, in connection with the subject of tuberculosis in swine stated that there was no question that there was a great deal of it in swine and in cattle. Recent investigations made since Robert Koch's famous speech before the International Tuberculosis Congress, held in London, 1901, tended to disprove many of his tenets, among them his belief that human tuberculosis is not communicable to animals, not that of animals to man.

The above report merely epitomizes the extemporaneous address made by Dr. Hughes, and summarizes the answers to a few of the questions put to him after the address. At the close of the evening Dr. Hughes was given a rousing unanimous vote of thanks. The hope was expressed by many that he would soon again address the City Hospital Alumni on some phase of the government work.

In closing the discussion Dr. Taake stated that the treatment had been entirely symptomatic. The pain was relieved by morphine sulphate. A cough mixture was given to check the cough. The perspiration was so profuse that it was thought best to reduce it to some extent, which was done by the administration of tincture of belladonna. Purgatives were given when he took charge of the patients. Upon investigation it was found that the pork was still hanging in the smoke house. This was about one month after the patients took sick. The pork was purchased from a near-by meat market, the proprietor of which secures his meat from a small packing house located in this city.

Dr. Taake thought that there were many cases of trichinosis which were not diagnosed. He substantiated the latter statement by citing several cases discovered in the operating room and a post-mortem. He believed that if the government officials knew of all the cases, a system of inspection would be enforced.

Severe localized pain after traumatism, especially in children, may be due to subperiosteal fracture, e. g., near the head of the humerus or the femur. Extreme localized tenderness is the chief sign; abnormal mobility and deformity are absent, and crepitus may not be elicited.

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EDITORIAL

The Boston Meeting of the A. M. A.

In the space at our comamnd it will be impossible to do justice to the long-to-be-remembered Boston meeting of the American Medical Association, which was from all view-points an occasion of profit and pleasure. The opening session (and all the general sessions) was held in Mechanics Hall, a hall admirably suited to the association's purposes. The body of the hall was reserved for members of the association, in the balconies were ladies and friends. Seated on the platform at the opening session were the presiding officer, the special guests and the ex-presidents of the association, all in the front row. They were President Lewis S. McMurtry, with Governor Guild on one side and Rev. Dr. Hale on the other; Mayor Fitzgerald, President Elliot of Harvard University, President-elect William J. Mayo of the association, Dr. Arthur T. Cabot, president of the Massachusetts Medical Society; Dr. Herbert L. Burrell, chairman of the local committee of arrangements; and these ex-presidents of the A. M. A.: Dr. Wyeth, Dr. Keen, Dr. Reed, Dr. Billings, Dr. Mathews, Dr. Musser and Dr. Henry O. Marcy.

After a few brief exchanges of courtesies Dr. Lewis S. McMurtry, the retiring president of the association, stepped to the front and extended a cordial welcome to the association and its friends. Then he introduced Dr. Hale who pronounced the invocation.

Addresses of welcome followed by Governor Guild of Massachusetts, who welcomed the association to the commonwealth, and expressed the high appreciate of his people in the work of our association; President Eliot, of Harvard, and Mayor Fitzgerald, of Boston, who spoke felicitously and assured the asso-

ciation that every endeavor to the scientific and social success of the meeting was ours to command, a matter which all already felt.

The retiring President, Dr. McMurtry, then introduced President Mayo.

The presidential address was quite what one would expect from Dr. Mayo, dealing largely with practical facts and existing conditions. He urged unity as a means to achievement; in this connection he said: "The present organization of the American Medical Association is but a beginning; we must further the interests of this body unselfishly, not for ourselves alone, but that we may better fulfil our sacred obligations to mankind. The people must be educated up to a point were they can understand the broad humanitarianism of modern medicine. Society appreciates the saving of a sick person's life by the skilled physician, but fails to see the priceless gifts to the human race made by preventive medicine and sanitary science. It views everything in detail and misses the perspective. We have failed to secure the support of the masses of the people to much-needed sanitary reforms, because we have appealed to them as one individual to another without the weight of an authoritative organization."

He also urged the education of the masses in the matter of infectious diseases, especially emphasizing tuberculosis. He held that there is no reason why a man who has become infected with typhoid from a city's neglect should not sue for damages as he would for personal injury sustained from falling through a defective sidewalk. Unavoidable sickness is bad enough, but when we stop to consider that the life of the individual is worth $5000 to the State, and that those who recover under great disability and expense, the continuance of unsanitary conditions is criminal. The experience of Vienna, which was converted from a typhoid center to one of freedom from such outbreaks by bringing in a pure water supply, has now been repeated over and over again in every civilized land. Yet hundreds of deaths from this preventable source yearly attest that the lesson has not yet been learned.

In the matter of governmental interference and control, in the presence of contagious disease he said: "One of the few misfortunes of the individual freedom afforded by a republican form of government is that it enables the most ignorant man, through prejudice, to interfere with and delay needed legislation, with the result that by the time the law can be passed the immediate object to be obtained has often disappeared. In Germany compulsory vaccination has practically caused smallpox to disappear from the army and country, a person properly protected being immune. In the State of Minnesota inability to enforce vaccination in the late smallpox epidemic permitted, from a few sources, 27,876 persons to become infected with this disorder; all due to a small but vociferous band of anti-vaccination agitators.

"Contagious disease in any place is not a matter of local or State interest alone, as the ease and freedom of transportation render local control impracticable and properly place it in the hands of the General Government. The keenness with which the American people are watching the affairs of Panama argues well for the future. The communication of Dr. Charles A. L. Reed awakened public interest. His portrayal of red tape and obstruction to sanitation in the Canal Zone has resulted in obtaining for that most able army medical officer, Colonel Gorgas, power to carry out the necessary reforms and has made the Canal Zone the most sanitary place in Latin America.

"The army and navy medical departments have worked intelligently against overwhelming odds. Their individual members have international reputations honestly achieved. Their schools for the special training of their men are in the highest degree efficient and deserving of every praise; but the departments have been so small as to be unable to act even as nuclei about which in time of war competent forces could be gathered and the militia of our country enter into conflict fearfully handicapped. The indications, however, are that these matters will now be rectified, and if so it will guarantee to the patriotic American that should he again be called on to serve his country his enemies will be in front and he will not be destroyed by his own side through neglect of sanitary laws.

Contract practice, fee division, commission giving, lodge practice and other evils were mentioned in condemnation. He urged the broadening of medical education that our schools may constantly graduate stronger men, and further, that graduates may not leave college to at once embark as specialists. "Graduation from a college, he said, is merely a commencement of a life study of medicine. Therefore, young men without special training under competent teachers should not be encouraged in wanton assaults on major surgical diseases unless justified by necessity. The future will demand schools for advanced training for those who desire to do special work. In the practice of medicine the student days are never over. There is so much to be learned that a long and industrious life leaves one with the feeling that he is but a beginner. The most important habit a young physician

can form is the "daily study habit." Let him put in even one hour a day with the reading of journals and books of reference and much can be accomplished. He should keep an account of the time, and if something interferes for a day he should charge himself up with it. The practitioner must make frequent trips away for the purpose of observation. In no other way can he avoid the rut of self-satisfied content, which checks advancement and limits usefulness. No amount of diligence as a student can take the place of personal contact with men in the same line of work."

At the second general session the orations on Medicine and Surgery were delivered. Dr. F. C. Shattuck, of Boston, delivered the address on Medicine, dealing with the development of the science rather than with any of its special phases.

Dr. Jos. D. Bryant, of New York, delivered the address on Surgery, chosing for his subject the "Nature and Progress of a Malignant Disease," referring to cancer. He pointed out the various known sources of this disease and said that it usually inflicted its ravages on old age, and seldom on youth. "The fish of the mountain springs and brooks, and also the product of the salty bodies of water, are sources of cancer," he said. "England and Germany through their crowned rulers are directing their efforts to learn the source of this disease, and benevolent humanitarians are gladly supplying the funds to pursue the work."

The work of the various sections was uniformally of such interest as to making the noting of features difficult, possibly the symposium on Tuberculosis and that on Venereal Prophylaxis were especially worthy of mention in the field outside surgery. The work of the various sections was featured by numerous and intensely interesting clinics at the many institutions which were rich in available material. This was an advantage not found in less populous meeting places.

The social side of the meeting was so eclipsed by its scientific features that many wholly lost sight of it, yet the entertainment was exceptional, and quite in keeping with the hospitality for which Boston is famed. There are so many points of historic and other interest within Boston's limits and within easy access that those who were tempted away from the sessions found the time full and well spent. The dinners, teas, concerts and other set entertainments were so arranged as not to interfere with the scientific work and were each and all delightful.

The election of officers for the ensuing year resulted as follows:

President, Dr. Joseph D. Bryant, New York.

First vice-president, Dr. Herbert L. Burrell, Boston.

Second vice-president, Dr. Andrew Smith, Portland, Ore.

Third vice-president, Dr. D. S. Fairchild, Des Moines, Ia.

Fourth vice-president, Dr. William S. Foster, Pittsburg, Pa.

General Secretary, Dr. George H. Simmons, Chicago.

Treasurer, Dr. Frank Billings, Chicago.

Board of Trustees, Drs. M. L. Harris, Chicago; W. H. Welch, Baltimore, and Myles F. Porter, Fort Wayne, Ind.

Atlantic City was decided upon as the next place of meeting.

The association also passed resolutions apprecaitive of the hospitality shown to the members and friends of the association by the local physicians, all those in fact who have had to do with the arrangements for the week's programme.

Officers elected by the sections were:

Section of Surgery and Anatomy—Chairman, Dr. M. J. Schamberg, Philadelphia; vice chairman, Dr. E. W. Branigan, Boston; secretary, Dr. Eugene S. Talbot, Chicago; delegate, Dr. Charles V. I. Brown, Milwaukee, Wis.

Obstetrics and Diseases of Women—Chairman, Dr. J. Wellesley Bovee, Washington, D.C.; vice chairman, Dr. Edward Reynolds, Boston; secretary, Dr. W. P. Manton, Detroit; delegate, Dr. Walter B. Dorsett, St. Louis.

Hygienic and Sanitary Science—Chairman Dr. Prince A. Morrow, New York City; secretary, Dr. Elmer E. Hegg, Seattle, Wash.; delegate, Dr. W. Lewis, Chicago.

Diseases of Children—Chairman, Dr. J. Ross Snyder, Birmingham, Ala.; secretary, Dr. George Wentworth, Chicago; delegate, Dr. T. W. Southworth, New York.

Pathology and Physiology—Chairman, Dr. W. L. Bierring, Iowa City, Ia.; secretary, Dr. W. B. Cannon, Boston; delegate, Dr. W. S. Hall, Chicago.

Laryngology, and Otology—Chairman, Dr. S. M. Snow, Philadelphia; vice chairman, Dr. Philip Hammond, Boston; secretary, Dr. W. Sohier Bryant, New York; delegate, Dr. Otto F. Frier, Chicago.

Ophthalmology—Chairman, Dr. G. C. Savage, Nashville, Tenn.; vice chairman, Dr. A. A. Hubbell, Buffalo; secretary, Dr. A. E. Bulson, Jr., Fort Wayne, Ind.; delegate, Dr. S. D. Pisley, Philadelphia.

Stomatology—Chairman, Dr. Schamberg, Philadelphia; vice chairman, Dr. Branigan, Boston; secretary, Dr. Eugene S. Talbot; delegate, Dr. G. V. I. Brown, Milwaukee.

LONDON LETTER

(WRITTEN FOR THE MEDICAL FORTNIGHTLY.)

JUNE 1, 1906.

LONDON SCHOOL OF CLINICAL MEDICINE.

The opportunities for post-graduation study in London have recently been much increased by the establishment of the London School of Clinical Medicine in connection with the Seamen's Hospital at Greenwich. It is a sister institution to the London School of Tropical Medicine, which has achieved so much success and has been founded by the same body, the Seamen's Hospital Society. The school is to be reserved entirely for qualified medical practitioners.

The "Dreadnought" Seamen's Hospital (so-called because it was formerly housed in the old wooden battle-ship, the "Dreadnought," moored in the Thames) which is the headquarters of the school is situated at Greenwich, about half an hour's journey from the center of London, e.g., Charing Cross, and is easily accessible by train, electric tram, and steamboat by a variety of routes. The hospital contains 250 beds and provides annually for 2000 in-patients and 10,000 out-patients. The out-patient department at Greenwich is supplemented by dispensaries in the East India dock road and at Gravesend, at which the annual attendance numbers 15,000 patients.

Three sessions of ten weeks duration are held in each year, and a short Vacation-Course of instruction will be provided during September when a sufficient demand arises to justify its institution.

Every variety of disease may be studied in the wards and out-patient rooms of the hospital, at the dispensaries, and at the affiliated hospitals.

The supply of material affords exceptional facilities for practical instruction in operative surgery and in pathology on the cadaver. The hospital also offers a wide field for the study of venereal diseases, and there is a special department with open-air wards for the treatment of tuberculosis.

Male patients only are received as in-patients by the Seamen's Society, but arrangements have been entered into with the Royal Waterloo Hospital for the reception of post-graduates who desire instruction in diseases of women and children; with the Bethlem Hospital for those who require tuition in mental disease; and with the General Lying-in Hospital for the prosecution of study in midwifery.

These hospitals are situated on the south side of the river, are directly linked to the "Dreadnought" by both railway and tramway, and are affiliated to the London School of Clinical Medicine.

For practitioners who desire, from time to time, to bring themselves into touch with the most recent scientific advances, as well as for graduates who are reading for the higher qualifications, there is ample provision for the acquisition of practical knowledge and technical skill in every departmennt of medicine and surgery.

The University of London recognizes the Dreadnought Hospital as an institution from which certificates of post-graduation study for the higher degrees are accepted.

The hospital contains a pathological museum and two laboratories which are fully equipped for study and research.

Tutorial classes are arranged, when required, on terms which may be ascertained at the office of the medical superintendent.

Residential accommodation can be procured in the neighborhood of the hospital. A list of respectable lodgings is kept in the medical superintendent's office for the convenience of those who desire to live in Greenwich.

A reading-room, reference-library, smoking-room, cloak-room and billiard-room are provided for the use of gentlemen who are studying at the hospital.

The physicians and surgeons attend the hospital every afternoon except Saturday.

The physicians and surgeons in charge of special departments attend the hospital on two afternoons a week.

The assistant-physicians and assistant-surgeons attend the out-patient department daily, in the forenoon.

The officers of the society in charge of the dispensaries in the East India dock road and at Gravesend attend daily at 12 o'clock.

Clinical lectures are delivered on five afternoons a week, in the lecture room and wards.

Operations are performed daily.

Post-mortem examinations are conducted by the pathologist, in the morning, at 10 o'clock. Intimation of such examinations is posted on the notice-boards within the hospital.

The physicians are Sir Dyce Duckworth, Dr. Frederich Taylor, Dr. Rose Bradford, Dr. Tanner Hewlett and Dr. Guthrie Rankin; the surgeons Sir William Bennett, Mr. Mayo Robson, Mr. Albert Carless, Mr. William Turner and Mr. Lawrie McGavin; ophthalmic surgeon, Mr. Vernon Cargill; physician for diseases of the throat, etc., Dr. St. Clair Thomson; surgeon for diseases of the skin, Mr. Malcolm Morris; X-rays, Mr. Mackenzie Davidson; dental surgeon, Mr. Kenneth Goodby, besides assistant physicians and surgeons and extra-mural lecturers on

diseases of the nervous system, hygiene, applied anatomy, diseases of women and children, midwifery, anesthetics and mental diseases. The medical superintendent is Dr. Choyce, and the secretary is Mr. P. Michelli, from whom full particulars may be obtained.

HARBEN LECTURES.

The Harben lectures of the Royal Institute of Public Health have this year been delivered by Prof. Metchnikoff of the Pasteur Institute, Paris, and have proved very interesting and instructive. In the first lecture, Prof. Metchnihoff dealt with the "hygiene of the tissues." He directed attention to the fact that persons frequently carried in their persons pathogenic microbes without suffering any ill-effect, and from an analysis of many facts he considers that immunity must be due to a modification of certain living parts of the body, in particular of the phagocytes. Wright had recently sought to prove that the phagocytes exert a passive role, acting only on microbes exposed to the action of substances (opsonins) present in the blood and body fluids, but experiments quoted seemed to indicate that the phagocytosis occurred in the absence of opsonins. The influence of alcohol in reducing resistance to infection was alluded to, and it was suggested that alcohol, opium, and other similar drugs should be used with great caution in infective diseases. On the other hand serum and physiological salt solution stimulate phagocytosis, and Paris surgeons have been using serum lavage and infections with the greatest benefit in major operations.

The second lecture dealt with the "hygiene of the alimentary canal." Prof. Metchnihoff stated that there could be no doubt that microbes frequently found their way into the blood and tissues from the intestinal tract, even when the wall of the intestine was intact, and he suggested that digestive leucocytosis was a means of defence against such invasion. A good deal of evidence was adduced to show that intestinal worms were frequently the cause of appendicitis by sitting up inflammation followed by infection. Prof. Metchnikoff therefore considers that no food should be eaten raw, no salads, no fresh fruit, no raw milk, everything must be cooked! The third lecture dealt with the "hygiene of syphilis." Prof. Metchnikoff pointed out that by far the great proportion of sufferers from syphilis were innocent victims. After having found that apes could be infected with syphilis attempts were made to prepare anti-syphilitic sera and vaccines, but they were found to be impracticable. Next preventive measures were tried by treating the seat of inoculation with various agents, particularly mercurial ointments. It was found that in the monkey inunction at the seat of inoculation with an ointment composed of calomel, one part and lanolin three or four parts, prevented infection up to twenty hours after inoculation. A young man, a medical student who volunteered for the experiment, and four monkeys were inoculated with syphilitic virus, and an hour afterwards the man and one of the monkeys were rubbed with the calomel ointment, one monkey was treated twenty hours after inoculation, the two other monkeys were left untreated. The two untreated monkeys showed primary lesions seventeen days afterwards, the one treated twenty hours after inoculation developed primary symptoms in thirty-nine days, while the man and monkey treated one hour after inoculation developed no sign of primary lesions.

BRITISH MEDICAL MEETING.

May I remind our American friends that the annual meeting of the British Medical Association is to be held this year at Toronto, commencing August 21st. We hope that many of them may be able to attend.

RICHARD T. HEWLETT.

FRACTURES of the head of the radius are probably more common than generally supposed, being overlooked frequently because of the absence of the ordinary signs of fracture.

SEA VOYAGES FOR INVALIDS.—The discussion on "Sea Voyages for Invalids," published in the Journal of Balneology and Climatology, January, 1906, provoked a number of opinions as to the advantages and disadvantages of sea travel for invalids. The consensus of opinion, including that of Dr. Robert W. Felkin, who opened the discussion, seemed to be, as a rule, against the treatment. He stated that the principal ailments which precluded a sea voyage are: (a) The strength of the patient—if there is too great exhaustion it is better to keep on land; (b) grave dyspepsia; (c) hepatic enlargement; (d) cardiac dilatation; (e) pyrexia or any inflammatory condition; (f) any tendency to hemorrhage; (g) epilepsy; (h) insanity; (i) pregnancy; (k) patients suffering from eye diseases; (l) any kidney disease; (m) phthisis, except, perhaps, in the very first stages. Dr. F. Sandwith's remark that: "The doctor who sent many patients to sea was generally one who had not done much travelling in bad weather," succeeded best perhaps in summing up the situation.—The Journal of Tropical Medicine.

REPORTS ON PROGRESS

Comprising the Regular Contributions of the Fortnightly Department Staff.

INTERNAL MEDICINE.

O. E. LADEMANN, M. D.

The Action of Quinin on the Different Malarial Plasmodia.—Craig's (American Medicine, April and May, 1906) study was undertaken to determine, if possible, the actual effect of quinin upon the various forms of the malarial plasmodia, and the best time for the administration of the drug, as shown by its action upon the parasites. The results obtained show that quinin acts upon every stage in the growth of all varieties of the plasmodia, but that its action is most marked upon the free spores and the young intracorpuscular forms, in the latter not preventing entirely the development, but producing very marked developmental changes. The first part of the author's manuscript is devoted to a resumé of literature and a personal consideration of the changes noted in the fresh blood containing the tertian quartan, and aestivo-autumnal plasmodia. The second part considers the appearance presented in the stained preparations and deductions in general. The most important practical deduction to be drawn from the study of the action of quinin upon the malarial plasmondia is that, in order to secure the best therapeutic results the drug should be present in the blood continually, and therefore should be administered in divided doses at regular intervals of time. This study demonstrates that quinin acts injuriously upon the plasmodia in all stages of their human life-cycle, with the possible exception of the large full-grown plasmodium just prior to segmentation, and thus to secure the best results, the drug should always be present in the blood. Given in divided doses at regular intervals the blood constantly contains a sufficient quantity practically to stop the development of the plasmodia which have succeeded in escaping it while free in the blood plasma, and recovery is thereby hastened. The practice of giving quinin in the manner mentioned is not only justified by the morphologic changes in the plasmodia, but its value is proved by practical experience. To illustrate the latter, the author presents the records of over four hundred cases of malarial fever, observed in soldiers returning from the Philippines and in the Philippines, including tertian, quartan and aestivo-autumnal infections, in which quinin was administered in doses of 0.5 gms. (7½ grains) every three hours until from 1.5 to 2 grms (22 to 30 grains) were taken, and in all these cases, recovery was prompt and occurred more quickly than in similar cases in which one large dose was administered prior to sporulation. In the tertian cases it was but very rarely that a second chill occurred, although in about 20 per cent of the cases a rise in temperature was noted upon the second day of the expected paroxysm. In the quartan cases a second paroxysm never occurred after the beginning of the administration of quinin in this way, while in the aestivo-autumnal cases, which comprised nearly two-thirds of the total number, the temperature, except in two pernicious cases, reached normal in from two to three days and recovery occurred. It is in the latter type of malarial infection that the administration of quinin in divided doses is especially efficient, for in this type it is generally impossible to tell the exact time of the ensuing paroxysm, and thus it is impossible to attack the parasites while they are free in the blood plasma by administering one large dose of the drug. The following are the final conclusions which the author believes are justified: 1. Quinin exercises an injurious effect upon the plasmodia of malaria during all stages of their human life-cycle, whether intracorpuscular or extracorpuscular, except when it is administered just prior to sporulation, at which time the sporulating body is not injured and sporulation occurs, but most of the spores are destroyed by the drug while they are free in the blood plasma 2. The marked morphologic changes, degenerative in character, produced by quinin in all species of the malarial plasmodia, during all stages of their growth, prove that in order to secure the best therapeutic results the drug should be continually present in the blood, and this is only possible when it is administered in divided doses at regular intervals of time.

Remarks on Sahli's Desmoid Test of the Stomach.—Einhorn (Jour. A. M. A., May 12, 1906; Deutsche Med. Wochenschrift, May 17, 1906) says that Sahli's desmoid reaction (see Medical Fortnightly, Vol. XXIX, No. 2) is unsuitable for the examination of the stomach function because catgut is digested in the bowel as well as in the stomach. The author applied the test in four cases in which there was a complete absence of gastric juice (achylia gastrica) with a positive desmoid reaction. In one case, where the desmoid test was administered four times, a varied condition was observed, the test being twice positive and twice negative. The days on which the desmoid test was applied the gastric secretion of these patients was usually

examined, by means of the stomach tube, in order to be certain that no gastric juice was present. As the reaction was usually positive it was to be inferred that the desmoid test did not indicate whether gastric juice was present or not. In order to controvert the idea of Sahli that after a test dinner there is sufficient gastric juice even when the test meal shows an absence of free hydrochloric acid, Einhorn made the following experiment: In case No. 2 he made a second desmoid test. Five hours after the patient had taken the methylene blue desmoid bag, and three hours after a larger meal the stomach contents were examined again with the result that the gastric juice was entirely absent and no blue discoloration of the stomach contents, although the urine voided shortly afterward was blue. In this case the reaction must have taken place in the intestines; otherwise the urine would not have been colored.

Determination of the Absence of Hydrochloric Acid by a Simple Stool Examination.—Hess (Med. Rec., April 28, 1906) bases the supposition that the stool may indicate the asbence of hydrochloric acid in the stomach by utilizing the fact that connective tissue can be digested only by the gastric juice. For three consecutive days a test diet is given the patient, the chief requirement being that it shall contain one-fourth pound of chopped beef so cooked that it is still rare within. In the absence of hydrochloric acid, under these conditions, particles of undigested connective tissue will be recognizable on carefully examining the finely divided stool. Hess advocates the application of this method in those cases where the introduction of the stomach tube is inadvisable.

Vaccination with Attenuated Plague Culture.—Kolle (Deutsche Medizinicshe Wochenschrift, No. 11, 1906) reports forty-two successful inoculations on men with attenuated cultures of living plague bacilli by keeping the cultures at a temperature of from 42 to 43 deg. C. These experiments were done in collaboration with those of Strong and demonstrate the harmlessness of such protective inoculations in man, as no unpleasant symptoms exhibited themselves, although the inoculated were closely observed for a period extending over four months.

Myiasis and Its Treatment.—Rooda Smit (Deutsche Medizinische Wochenschrift, No. 19, 1906) discussing the subject of fly disease (Fliegenkrankheit) says the larva or maggots are developed from the eggs of either the lucilia hominivora or the aestres species. The flies usually select for the deposition of their eggs excoriated surfaces of the skin, as eczema, acne, ulcerations, and suppurations of the auditory meatus and nose. Myiasis of the intestines occurs, but is an extreme rarity. The incubation period is of a short duration. The symptoms are variable and are dependent (1) on the part invaded and the organs which they may penetrate, and (2) on the sensitiveness of the individual. In one of the author's cases the patient complained of severe headache and intense itching with a temperature of 39 deg. C. Maggots inhabiting the nose or nasal sinuses, the external auditory canal or middle ear, or beneath the eyelids may produce symptoms of a malignant or dangerous type. The prognosis, therefore, is often dubious and sometimes may be fatal. The diagnosis is simple. The maggots are seen from time to time emerging from the deeper structures (skin and mucous membranes) to the surface. Insufflations and tampons of calomel in the nose and external ear are highly lauded by the writer, and far more efficient than any of the other remedial agents which have been recommended.

GENITO-URINARY.

T. A. HOPKINS, M. D.

Gastric Syphilis.—J. A. Armstrong reports (Montreal Med. Jour., June, 1906) his surgical findings in this rare condition as follows: The stomach wall thick, about 1 c. m., in places 1½ c.m.; very little bleeding, muscular tissue showed complete denudation of the mucosa over an area extending completely around the stomach at the pyloric end of the incision. The same condition extended along the interior and anterior aspect of the stomach toward the cardiac end of the organ fully four inches. Here and there, especially toward the margin of the bared surface, there were small islets of mucous membrane having a rough cockscomb appearance and a purplish tint. The edges of the ulcerated area are well defined, serpigenous in out line and abrupt. The edge was slightly heaped up and undermined and just in the undermining angle was a whitish line. The surface of the ulcerated and denuded area was rather smooth (neither caseous nor necrosing) of a pinkish red color and almost bloodless. In the thickened area some cicatrization and contracture had occurred, producing a certain degree of hour-glass contracture, two or three inches from the pylorus. A slice of mucous membrane, a section through the muscular wall and mucosa and a snipping from the edge of the ulcer were taken for microscopical examination. After extending the wound to give

sufficient space the exuberant edges of the ulcer were pared, the base was curetted, and the thermo-cautery lightly applied to as much of the ulcerated surface as could be reached, the very slight bleeding following curettage being easily checked by the same means. The gastric and abdominal wounds were then closed by suture. The tissues removed were examined by Dr. P. G. Wooley, who reported as follows: "The tissue from the base suggested malignancy, for there were small masses of epithelial cells surrounded by a fibrous stroma; but the edges of the ulcer were simply fibrous tissue and muscle, the former in excess and there was no marked infiltration. The base was markedly inflammatory and not malignant." That the condition was not one of ulcus simplex of unusual dimensions such as have been reported in medical literature, from time to time may be difficult to prove. Dr. Lafleur, however, reports that the man was not a chronic dyspeptic and that an acidity and not hyperacidity existed from the onset of the illness. The chief argument is drawn from the anatomic character of the lesion. Histologically the tissue removed bore a close resemblance to those in the case reported by Dr. Flaxner as gastric syphilis, in Vol. XIII of the Transactions of the Association of American Physicians. It is over three years since the operation was performed. During this period he has been in prefect health, weight up to his standard and no indigestion.

Bacteriuria. — Bacteriuria, understanding by the term the presence of bacteria in the urinary tract above the compressor urethrae muscle, is, according to G. P. La Roque (Jour. A. M. A., June 16), a much more common condition than is generally supposed. Unless associated with suppuration it produces none of the symptoms of true inflammation in a healthy person, but such may follow in conditions of lessened vital resistance. Local symptoms, when present, are: Slight increased frequency of micturition, mild ardor urinae, occasionally incontinence, and in children there may be nervous disturbances. If no abrasions exist, toxins are not absorbed In many cases there are no subjective symptoms. The most common infecting organism is the bacillus coli and it is present in nearly all cases, often in pure culture. In some cases of typhoid bacteriuria it is absent. Alkalinity of the urine means the presence of the staphylococcus or bacillus proteus vulgaris; all other organisms, these being absent, produce an acid urine. When the bacteria come by way of the kidneys, as in typhoid septicemia or scarlatina, there is always a positive albuminuria. When they enter from the genitalia or the lower intestinal tract, the presence of albuminuria is dependent on the previous condition of the kidneys. The history will probably suggest the causative germ. In treating the condition, urinary and intestinal antiseptics, urotropin (hexamethylenamin), salol, boric acid and large draughts of water are advised. Vesical instrumentation and irrigations are to be avoided so far as possible. In spinal disease with paralysis of the compressor muscle, bacteriuria is a constant attendant affection, and when the urine becomes ammoniacal, cystitis is inevitable. The danger of life in these cases from ascending urinary affection makes bacteriuria a serious matter, and every one recognizes the value of thorough, gentle, aseptic bladder drainage in their treatment. In cases, as in the aged, dependent on colitis and constipation, free purgation, regulated diet and intestinal antiseptics are essential. Colonic lavage for two or three months is practiced by Janet. A case of very marked bacteriuria following dysentery is reported.

THE reduction in the amount of typhoid fever is the most remarkable fact in the sanitary history of Chicago during the last decade. The weekly bulletin of the health department reports that the mortality there from typhoid fever during the ten years from 1885 to 1894 inclusive was 7.9 per 10,000. In 1891 it was 17.31, being greater that year than in any other city in the civilized world. After the drainage canal and intercepting sewers were built the typhoid mortality was reduced in the decade from 1895 to 1904 inclusive to 3.2, and in 1905 it was 90 per cent less than it was in 1891.

FORMIC ACID IS THE LATEST REJUVENATOR.—It is better than the once celebrated Brown-Sequard elixir, or the much praised glycero phosphates. It is claimed that sodium formate in fifteen-grain doses three or four times a day is the proper administration for a healthy individual who is anxious to work without fatigue. The Critic and Guide quotes physicians who profess faith in this "wonderful" remedy. The British Columbia Pharmaceutical Record states that a customer far advanced in years regularly buys formic acid which he believes has prolonged his life. Sometimes he eats red ants, we suppose with a view of getting the formic acid at nature's fountain. It is worth while to mention that formic acid has for many ages been an article of materia medica. —Meyer Bros. Druggist.

THE MEDICAL FORTNIGHTLY

A Cosmopolitan Biweekly for the General Practitioner

The Medical Fortnightly is devoted to the progress of the Practice and Science of Medicine and Surgery. Its aim is to present topics of interest and importance to physicians, and to this end, in addition to a well-selected corps of Department Editors, it has secured correspondents in the leading medical centers of Europe and America. Contributions of a scientific nature, and original in character, solicited. News of Societies, and of interesting medical topics, cordially invited.

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FAVORITE PRESCRIPTIONS

HEMORRHOIDS.—

℞ Chloretoni..... gr. xxx
Orthoformi..... gr. xxxvij
Ungt. belladonnae .....
Iodoformi .....aa gr. xxx
Adipis lanae hydrosi, q.s.ad 3vj

M. et ft. ungt. Sig. Apply several times a day.

Indication.—Used to relieve painful internal piles with prolapse.—Ex.

MALARIA.—

℞ Euquininae..... gr. 4-8
Pip. nigr..... gr. 2-3

Dr. tal. dos. No. 15. One capsule two or three times a day.

℞ Euquininae..... gr. 90
Ferri sulph. exsic..... gr. 18
Acidi arsenosi..... gr. 1
Pulv. capsici..... gr. 10

M. pil. mass in pil. No. 40 dividenda. Sig. Two pills after each meal.—Bjorkman, Merck's Archives.

GOUT.—The following is a formula for the treatment of this disease: For external application:

℞ Ol. gaultheriae.....
Ol olivae.....
Lini. saponis.....
Tinct. aconiti .....
Tinct. opii.....aa fl. 3 ij.

M. Sig. Apply freely and cover with cotton batting.—Satterlee, The Med. Bull.

RHEUMATISM.—

℞ Acidi salicylici..... 3 j
Lanolini..... 3 v

M. ft. ungt. Sig.: Apply locally to the affected joint. Or:

℞ Extracti belladonna..... gr. v
Acidi salicylici.....
Sodii salicylici.....aa gr. xx
Lanolini..... 3 iv

M. ft. ungt. Sig. Apply locally. Or:

℞ Ichthyoli..... 3 j
Lanolini..... 3 ij-vj

M. ft. ungt. Sig. Apply locally.—Journal of Medicine and Science.

PURULENT OPTHALMIA.—Scrini thoroughly removes the secretions from the lids by means of absorbent cotton, and applies the following lotions:

℞ Potass. perman..... gr. v
Aq. dest..... O ij

M. Sig.: To be used as an irrigation to the lids.

Three or four hours later the following should be applied locally:

℞ Argenti nitratis (crys.)..... gr. iij
Aq. dest..... 3 v

M. Sig.: To be applied locally by means of an application. This should be neutralized by a solution of sodium chloride.

If a one to two per cent solution of silver nitrate gives no relief in two or three days, it should be increased to four or five per cent. In case of corneal infiltration or ulceration, the silver nitrate should not be allowed to come in contact with the cornea. In such cases the following ointment should be applied:

℞ Iodoformi (dissolved in ether). gr. iv
Vaselini (neutral)..... 3 iiss

M. Sig.: Apply locally.

If perforation seems probable, instill a few drops of a four per cent solution of atropine into the eye.—American Medicine.

INHALATION IN CHRONIC BRONCHITIS.—The Bulletin Generale de Therapie recommends the inhalation, from a bottle provided with two tubes, of air saturated with the vapor of the following mixture:

℞ Oil of eucalyptus..... 30 parts
Menthol..... 5 parts
Thymol..... 2 parts
Guaiacol, crystal ..... 5 parts
Water.....200 parts

During the performance of a hernia operation it is often helpful for the anesthetist to allow the patient to react sufficiently to strain into view a sac that has slipped back into the abdomen.